

Nos. 24-1889, 24-2661, 24-2663

United States Court of Appeals for the Eighth Circuit

No. 24-1889

Sorptive Minerals Institute,
Petitioner

v.

Mine Safety and Health Administration and
Vincent N. Micone, III,¹ Acting Secretary of Labor,
United States Department of Labor,
Respondents

No. 24-2661

National Stone, Sand, and Gravel Association, et al.
Petitioners

v.

Mine Safety & Health Administration, et al.
Respondents

No. 24-2663

Sorptive Minerals Institute and Blue Mountain
Production Company
Petitioners

v.

Mine Safety & Health Administration, et al.
Respondents

¹ Under Fed. R. App. P. 43(c)(2), Vincent N. Micone, III is automatically substituted for Julie A. Su.

On Petition for Review of a Rule
of the Mine Safety and Health Administration

Brief of Mine Safety and Health Administration,
Vincent N. Micone, III, Acting Secretary of Labor, and
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Summary of the Case

Respirable silica is a toxic airborne hazard ubiquitous in mines. Exposure to silica dust can cause disabling and deadly diseases like silicosis, kidney disease, and lung cancer. This Mine Safety and Health Administration rule reduces miners' exposure to silica by setting a permissible exposure limit (PEL) of 50 micrograms of silica per cubic meter ($\mu\text{g}/\text{m}^3$) of air, imposes limited restrictions on how operators can comply with the PEL, creates medical surveillance obligations consistent with existing MSHA rules, and—consistent with how MSHA regulates other airborne contaminants and has regulated silica for decades—does not exclude any mines. It is supported by decades of scientific research showing that it is feasible. The rule falls within MSHA's statutory authority to issue standards and is not arbitrary.

This rule affects every miner in the United States. Petitioners have raised numerous complicated legal and factual issues. Given the complexity and importance of the issues, the Secretary requests 20 minutes for oral argument.

Table of Contents

Summary of the Case	i
Table of Contents	ii
Table of Authorities	v
Jurisdictional Statement	1
Statement of the Issues	1
Statement of the Case	3
1. Statutory background	3
2. Factual Background.....	5
2.1. Respirable crystalline silica	5
2.2. Silica exposure health risks	6
3. Regulatory Background	8
3.1. The final rule	9
3.1.1 The hierarchy of controls	11
3.1.2 Sampling.....	14
3.1.3 Medical surveillance.....	17
Summary of the Argument	19
Argument	22
1. Standard of review	22
1.1. Agency action generally	22
1.2. Changes from the proposed rule	24
1.3. Statutory interpretation	26
2. The Mine Act does not require MSHA to find “significant risk” before regulating.	26
2.1. “Significant risk” is a requirement based in the OSH Act’s text and legislative history; it does not apply to MSHA.....	27

2.2.	The Mine Act does not contain the statutory text that requires OSHA to find “significant risk.”	29
2.3.	Other statutory provisions do not require MSHA to find “significant risk.”	33
2.4.	The Mine Act’s legislative history does not support requiring MSHA to find “significant risk.”	40
2.5.	Congress properly delegated the Secretary’s authority to promulgate standards under the Mine Act.	42
3.	MSHA’s feasibility determination, and its prohibition of miner rotation and respirators as a means of compliance with the PEL, are not arbitrary.	45
3.1.	MSHA rationally determined that the 50 µg/m ³ PEL is feasible with currently available engineering and administrative controls.	45
3.2.	MSHA’s decision to prohibit rotation of miners as a compliance method is rational and adequately explained.	58
3.3.	MSHA’s decision to prohibit the use of respirators as a means of compliance with the PEL is rational and adequately explained.	66
4.	MSHA’s decision not to impose a “one size fits all” error factor on mine operator samples was rational and adequately explained.	73
5.	MSHA’s decision not to allow “objective data” to confirm initial sampling was rational and adequately explained.	77
6.	The rule’s medical surveillance requirements are consistent with the Mine Act and rationally explained.	82
6.1.	MSHA has statutory authority to promulgate the rule’s medical-examination requirements.	82
6.2.	MSHA rationally determined that the medical surveillance requirements are the most effective means to determine threats to miner health.	89

6.3.	MSHA rationally determined that there is sufficient availability of X-ray testing.....	93
6.4.	MSHA’s decision to require miners’ X-ray classifications to be reported to NIOSH is rational and a logical outgrowth of the proposed rule.....	95
6.4.1	MSHA thoroughly considered miners’ confidentiality and explained its decision to require the reporting of X-ray classifications to NIOSH.	95
6.4.2	Petitioners had adequate notice that a requirement that X-ray classifications be sent to NIOSH might be included in the final rule.	100
7.	MSHA rationally decided not to exclude sorptive mineral mines.	101
7.1.	MSHA examined the best available evidence about sorptive minerals’ toxicity.....	101
7.2.	MSHA adequately explained its decision not to exclude sorptive minerals.	111
7.3.	The final rule is feasible for the sorptive minerals industry.....	117
8.	Issues raised for the first time by Amici cannot be considered.	119
9.	Remedy	121
	Conclusion	124
	Certificate of Compliance	i
	Certificate of Service.....	ii

Table of Authorities

Cases

<i>Abramski v. United States</i> , 573 U.S. 169 (2014)	87
<i>Adventist Health Sys./SunBelt, Inc. v. Dep’t of Health & Hum. Servs.</i> , 17 F.4th 793 (8th Cir. 2021)	2, 22, 23
<i>Am. Bankers Ass’n v. Nat’l Credit Union Admin.</i> , 934 F.3d 649 (D.C. Cir. 2019).....	123
<i>Am. Iron & Steel Inst. v. OSHA</i> , 939 F.2d 975 (D.C. Cir. 1991)	46
<i>Am. Min. Cong. v. Marshall</i> , 671 F.2d 1251 (10th Cir. 1982)	2, 76, 77
<i>Am. Textile Mfrs. Inst. v. Donovan</i> , 452 U.S. 490 (1981)	27, 46
<i>Associated Builders & Contractors of Tex., Inc. v. NLRB</i> , 826 F.3d 215 (5th Cir. 2016).....	98
<i>Aviators for Safe & Fairer Regul., Inc. v. F.A.A.</i> , 221 F.3d 222 (1st Cir. 2000)	67
<i>Behlmann v. Century Sur. Co.</i> , 794 F.3d 960 (8th Cir. 2015)	26
<i>Biden v. Missouri</i> , 595 U.S. 87 (2022).....	2, 22, 77
<i>Bowman Transp., Inc. v. Ark.-Best Freight</i> , 419 U.S. 281 (1974).....	68
<i>Cargill v. Garland</i> , 57 F.4th 447 (5th Cir. 2023).....	87
<i>Carlson v. Postal Regul. Comm’n</i> , 938 F.3d 337 (D.C. Cir. 2019)	121
<i>City of Portland, Or. v. EPA</i> , 507 F.3d 706 (D.C. Cir. 2007)	117
<i>Commc’n Workers of Am. v. Beck</i> , 487 U.S. 735 (1988)	34

<i>Consol Penn. Coal Co., LLC v. FMSHRC</i> , 941 F.3d 95 (3d Cir. 2019)	119
<i>Dep’t of Commerce v. New York</i> , 588 U.S. 752 (2019)	22, 23, 45
<i>Designworks Homes, Inc. v. Columbia House of Brokers Realty, Inc.</i> , 9 F.4th 803 (8th Cir. 2021)	86
<i>Dolan v. USPS</i> , 546 U.S. 481 (2006)	83
<i>Donovan ex rel. Anderson v. Stafford Const. Co.</i> , 732 F.2d 954 (D.C. Cir. 1984)	85
<i>Donovan v. Dewey</i> , 452 U.S. 594 (1981)	29, 44
<i>Eldred v. Ashcroft</i> , 255 F.3d 849 (D.C. Cir. 2001)	119, 120
<i>Esquivel-Quintana v. Sessions</i> , 581 U.S. 385 (2017)	82
<i>Evergreen Shipping Agency Corp. v. Fed. Mar. Comm’n</i> , 106 F.4th 1113 (D.C. Cir. 2024)	79
<i>FCC v. Fox Television Stations, Inc.</i> , 556 U.S. 502 (2009)	23, 24
<i>FCC v. Prometheus Radio Project</i> , 592 U.S. 414 (2021)	104
<i>Firearms Regul. Accountability Coal., Inc. v. Garland</i> , 112 F.4th 507 (8th Cir. 2024)	25
<i>First Am. Discount Corp. v. Commodity Futures Trading Comm’n</i> , 222 F.3d 1008 (D.C. Cir. 2000)	101
<i>Friends of the Boundary Waters Wilderness v. Robertson</i> , 978 F.2d 1484 (8th Cir. 1992)	1, 46
<i>FTC v. Phoebe Putney Health Sys., Inc.</i> , 568 U.S. 216 (2013)	120
<i>GameFly, Inc. v. Postal Regulatory Comm’n</i> , 704 F.3d 145 (D.C. Cir. 2013)	79

<i>Gonzales v. Carhart</i> , 550 U.S. 124 (2007)	83
<i>Gundy v. United States</i> , 588 U.S. 128 (2019).....	43
<i>Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.</i> , 448 U.S. 607 (1980)	1, 19, 27, 28, 30, 33, 35, 36, 40, 43, 62
<i>K. Mart Corp. v. Cartier, Inc.</i> , 486 U.S. 281 (1988)	121
<i>Kennecott Greens Creek Mining Co. v. MSHA</i> , 476 F.3d 946 (D.C. Cir. 2007)	1, 2, 4, 39, 46, 49, 54, 56, 63
<i>Long Island Care at Home, Ltd. v. Coke</i> , 551 U.S. 158 (2007)	25
<i>Loper Bright Enters. v. Raimondo</i> , 603 U.S. 369 (2024)	26
<i>Loving v. United States</i> , 517 U.S. 748 (1996)	43
<i>Lozano v. Montoya Alvarez</i> , 572 U.S. 1 (2014)	32
<i>McClung v. Paul</i> , 788 F.3d 822 (8th Cir. 2015)	23, 96
<i>Mistretta v. United States</i> , 488 U.S. 361 (1989)	43
<i>Mkt. Synergy Grp., Inc. v. U.S. Dep’t of Lab.</i> , 885 F.3d 676 (10th Cir. 2018).....	101
<i>Mock v. Garland</i> , 75 F.4th 563 (5th Cir. 2023)	24, 25
<i>Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.</i> , 463 U.S. 29 (1983)	2, 3, 23, 68, 110
<i>Nasdaq Stock Mkt. LLC v. SEC</i> , 38 F.4th 1126 (D.C. Cir. 2022).....	122
<i>Nat’l Ass’n Mfrs., v. SEC</i> , 105 F.4th 802 (5th Cir. 2024)	122

<i>Nat’l Broad. Co. v. United States</i> , 319 U.S. 190 (1943).....	44
<i>Nat’l Indus. Sand Ass’n v. Marshall</i> , 601 F.2d 689 (3d Cir. 1979).....	85
<i>Nat’l Min. Ass’n v. Sec’y, U.S. Dep’t of Lab.</i> , 812 F.3d 843 (11th Cir. 2016)	1, 3, 4, 5, 29, 42, 46, 102, 103, 111, 119
<i>Nat’l Mining Ass’n v. MSHA</i> , 116 F.3d 520 (D.C. Cir. 1997)	1, 29, 38, 39
<i>Nat’l Mining Ass’n v. MSHA</i> , 512 F.3d 696 (D.C. Cir. 2008)	2, 25, 80
<i>Nat’l Mining Ass’n v. United Steel Workers</i> , 985 F.3d 1309 (11th Cir. 2021)	1, 28, 29, 32, 37, 38, 42
<i>Nat’l Petrochemical & Refiners Ass’n v. EPA</i> , 287 F.3d 1130 (D.C. Cir. 2002)	49
<i>North Carolina v. FERC</i> , 730 F.2d 790 (D.C. Cir. 1984)	122
<i>Northeast Md. Waste Disposal Auth. v. EPA</i> , 358 F.3d 936 (D.C. Cir. 2004).....	2, 26
<i>Oil, Chem. & Atomic Workers Int’l Union v. Zegeer</i> , 768 F.2d 1480 (D.C. Cir. 1985)	29
<i>Pattison Sand Co., LLC v. FMSHRC</i> , 688 F.3d 507 (8th Cir. 2012).....	3
<i>Peck v. Thomas</i> , 697 F.3d 767 (9th Cir. 2015).....	114
<i>Pollard v. E.I. du Pont de Nemours & Co.</i> , 532 U.S. 843 (2001).....	34
<i>Pub. Citizen Health Rsch. Grp. v. Tyson</i> , 796 F.2d 1479 (D.C. Cir. 1986)	23
<i>Resident Council of Allen Parkway Vill. v. U.S. Dep’t of Hous. & Urb. Dev.</i> , 980 F.2d 1043 (5th Cir. 1993).....	120
<i>Ark. Pharmacists Ass’n v. Harris</i> , 627 F.2d 867 (8th Cir. 1980).....	24

<i>Robinson v. Shell Oil Co.</i> , 519 U.S. 337 (1997)	86
<i>Safari Club Int’l v. Haaland</i> , 31 F.4th 1157 (9th Cir. 2022)	108
<i>Sanzone v. Mercy Health</i> , 954 F.3d 1031 (8th Cir. 2020)	83
<i>Solis v. Summit Contractors, Inc.</i> , 558 F.3d 815 (8th Cir. 2009)	119
<i>Star Athletica, L.L.C. v. Varsity Brands, Inc.</i> , 580 U.S. 405 (2017).....	83
<i>Union Pac. R.R. Co. v. United States</i> , 865 F.3d 1045 (8th Cir. 2017).....	31, 36
<i>United States v. Bruguier</i> , 735 F.3d 754 (8th Cir. 2013).....	32
<i>United States v. Kuehl</i> , 706 F.3d 917 (8th Cir. 2013).....	44
<i>United States v. Lester</i> , 92 F.4th 740 (8th Cir. 2024)	26
<i>United States v. Pacheco</i> , 977 F.3d 764 (9th Cir. 2020)	88
<i>United States v. Talley</i> , 83 F.4th 1296 (11th Cir. 2023)	32
<i>United States v. Wilson</i> , 503 U.S. 329 (1992)	87
<i>United Steel v. MSHA</i> , 925 F.3d 1279 (D.C. Cir. 2019)	123
<i>United Steelworkers v. Marshall</i> , 647 F.2d 1189 (D.C. Cir. 1980)	117
<i>Whitman v. Am. Trucking Ass’ns</i> , 531 U.S. 457 (2001)	44
<i>Wisconsin Cent. Ltd. v. United States</i> , 585 U.S. 274 (2018).....	31, 36

Statutes

29 U.S.C. 651	37
29 U.S.C. 651(b)(3)	35
29 U.S.C. 652(8)	27, 28, 30
29 U.S.C. 655(b)(5)	1, 32, 33
30 U.S.C. 801(a)	3
30 U.S.C. 801(b)	87
30 U.S.C. 801(c)	3, 37, 42, 89
30 U.S.C. 801(d)	3, 37, 42
30 U.S.C. 801(e)	87
30 U.S.C. 801(g) (1976)	36
30 U.S.C. 801(g)(1)	35
30 U.S.C. 802(g)	85
30 U.S.C. 802(l)	30
30 U.S.C. 811(a)	4, 30, 44
30 U.S.C. 811(a)(1)	96
30 U.S.C. 811(a)(2)	24
30 U.S.C. 811(a)(6)(A)	1, 3, 4, 32, 33, 44, 45, 66, 87, 102, 109, 110
30 U.S.C. 811(a)(7)	3, 62, 63, 82, 87, 89, 92, 93
30 U.S.C. 813(a)	113
30 U.S.C. 813(g)(1)	87
30 U.S.C. 813(h)	4
30 U.S.C. 815(a)	75
30 U.S.C. 815(b)(2)(C)	87
30 U.S.C. 815(c)(1)	87
30 U.S.C. 817(a)	41
30 U.S.C. 818(a)(2)	87
30 U.S.C. 842(h)	9, 69

30 U.S.C. 843(a).....	87, 90
30 U.S.C. 846.....	87
30 U.S.C. 861(b).....	87
30 U.S.C. 862(a).....	87
30 U.S.C. 862(f)	87
30 U.S.C. 863(c)(1)	87
30 U.S.C. 877(a)	87
30 U.S.C. 902.....	87
30 U.S.C. 938	87
30 U.S.C. 957	4
5 U.S.C. 553(b)	24
5 U.S.C. 553(c)	24
5 U.S.C. 706(2)(A)	2, 22, 24

Federal Regulations

30 C.F.R. 50.20	92
30 C.F.R. 50.20(a)	92
30 C.F.R. 56.5002.....	8
30 C.F.R. 56.5005.....	8, 13
30 C.F.R. 56.5005(a).....	71
30 C.F.R. 57.5002	8
30 C.F.R. 57.5005	8, 13
30 C.F.R. 57.5005(a)	71
30 C.F.R. 57.5060(d)	71
30 C.F.R. 60.10.....	54
30 C.F.R. 60.11	9, 54
30 C.F.R. 60.11(a)	11, 13
30 C.F.R. 60.12(a)	14
30 C.F.R. 60.12(a)(1)	81

30 C.F.R. 60.12(a)(4)	16
30 C.F.R. 60.12(b)	10
30 C.F.R. 60.12(c)	10, 14
30 C.F.R. 60.12(e)	10, 14
30 C.F.R. 60.12(e)(4)	15, 74
30 C.F.R. 60.12(f)(1)	15
30 C.F.R. 60.12(f)(2)	15, 75
30 C.F.R. 60.13	10
30 C.F.R. 60.14	10
30 C.F.R. 60.14(a)	71
30 C.F.R. 60.14(a)(1)	13
30 C.F.R. 60.14(a)(2)	13, 63
30 C.F.R. 60.15	10
30 C.F.R. 60.15(a)	17
30 C.F.R. 60.15(a)(2)	17, 93
30 C.F.R. 60.15(b)	17
30 C.F.R. 60.15(c)	17
30 C.F.R. 60.15(d)(1)	17
30 C.F.R. 60.16	10
30 C.F.R. 60.2	54
30 C.F.R. 70.101	8
30 C.F.R. 70.201	74
30 C.F.R. 70.208	9
30 C.F.R. 70.209	9
30 C.F.R. 70.210	75
30 C.F.R. 71.101	9
30 C.F.R. 71.201	74
30 C.F.R. 71.206	9

30 C.F.R. 71.207	75
30 C.F.R. 72.100	9
30 C.F.R. 72.100(a)(2)	100
30 C.F.R. 90.207	9
30 C.F.R. Part 70, Table 70-1	74
30 C.F.R. Part 71, Table 71-1	74
30 CFR 57.5060(e)	58

Federal Register Documents

45 Fed. Reg. 80,760 (Dec. 5, 1980)	62
66 Fed. Reg. 5706 (Jan. 19, 2001)	64
70 Fed. Reg. 32,868 (June 6, 2005)	70
71 Fed. Reg. 28,924 (May 18, 2006)	11, 56, 58, 70
79 Fed. Reg. 24,814 (May 1, 2014)	75, 91
84 Fed. Reg. 45,452 (Aug. 29, 2019)	9
88 Fed. Reg. 44,852 (July 13, 2023)	9, 15, 16, 17, 18, 76, 80, 81, 91, 100
89 Fed. Reg. 28,218 (Apr. 18, 2024)	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 64, 65, 67, 68, 69, 72, 73, 76, 78, 79, 84, 85, 91, 92, 93, 94, 96, 97, 98, 99, 103, 105, 107, 109, 110, 112, 113, 114, 115, 116, 117, 118, 122, 123
91 Fed. Reg. 16,286 (Mar. 25, 2016)	105, 109

Other Authorities

<i>About Coal Workers' Health Surveillance Program</i> , NIOSH, https://www.cdc.gov/niosh/cwhsp/about/index.html	100
<i>Black Lung Screenings</i> , NIOSH, https://www.cdc.gov/niosh/cwhsp/screenings/index.html	99
H.R. Rep. No. 89-606 (1965)	41
H.R. Rep. No. 95-312 (1977)	29, 40, 70
<i>Merriam-Webster's Collegiate Dictionary</i> (11th ed. 2003)	84

Pub. L. No. 91-173, 83 Stat. 742 (1969)	30
Pub. L. No. 91-596, 84 Stat. 1590 (1970)	30
S. Rep. No. 91-1282 (1970).....	28, 40, 41
S. Rep. No. 91-411 (1969)	41
S. Rep. No. 95-181 (1977)	96, 118
Scalia & Garner, <i>Reading Law: The Interpretation of Legal Texts</i> (2012).....	34
<i>The Random House College Dictionary</i> (rev. ed. 1984).....	83
<i>Webster's Third New International Dictionary</i> (1976)	83

Federal Mine Safety and Health Review Commission Decisions

<i>Arkholia Sand & Gravel, Inc.</i> , 17 FMSHRC 593 (1995) (ALJ)	53
<i>Nelson Quarries</i> , 30 FMSHRC 254 (2008) (ALJ)	53, 116
<i>Sims Crane</i> , 41 FMSHRC 393 (2019)	75
<i>Union Oil Co. of Calif.</i> , 9 FMSHRC 282 (1987) (ALJ)	75

Jurisdictional Statement

Petitioners' jurisdictional statements are accurate.

Statement of the Issues

1. The Supreme Court has required the Occupational Safety and Health Administration to make a finding of “significant risk” before regulating. The Mine Act does not contain the statutory text or legislative history the Court’s decision was based on. Must MSHA make a finding of “significant risk” before regulating on health issues?
 - 30 U.S.C. 811(a)(6)(A)
 - 29 U.S.C. 655(b)(5)
 - *Nat’l Mining Ass’n v. MSHA*, 116 F.3d 520 (D.C. Cir. 1997)
 - *Kennecott Greens Creek Mining Co. v. MSHA*, 476 F.3d 946 (D.C. Cir. 2007)
 - *Nat’l Mining Ass’n v. United Steel Workers*, 985 F.3d 1309 (11th Cir. 2021)
 - *Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607 (1980) (plurality opinion)
2. Did MSHA rationally determine, and adequately explain its conclusion, that the PEL for respirable crystalline silica is feasible?
 - 30 U.S.C. 811(a)(6)(A)
 - *Friends of the Boundary Waters Wilderness v. Robertson*, 978 F.2d 1484 (8th Cir. 1992)
 - *Kennecott*, 476 F.3d 946
 - *Nat’l Min. Ass’n v. Sec’y, U.S. Dep’t of Lab.*, 812 F.3d 843 (11th Cir. 2016)

3. Did MSHA rationally determine, and adequately explain its decisions, to prohibit rotation of miners and use of respirators as a means of achieving compliance with the permissible exposure limit?
 - 5 U.S.C. 706(2)(A)
 - *Adventist Health Sys./SunBelt, Inc. v. Dep't of Health & Hum. Servs.*, 17 F.4th 793 (8th Cir. 2021)
 - *Biden v. Missouri*, 595 U.S. 87, 96 (2022)
 - *Kennecott*, 476 F.3d 946
4. Did MSHA rationally decide, and adequately explain its decision, not to impose a specific error factor for operator samples in favor of affording operators flexibility to use a variety of sampling devices and laboratories?
 - *Am. Min. Cong. v. Marshall*, 671 F.2d 1251 (10th Cir. 1982)
 - *Kennecott*, 476 F.3d 946
5. Did MSHA rationally decide, and adequately explain its decision, to require operators to take two initial samples rather than rely on “objective data” for the second sample?
 - *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983)
 - *Northeast Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936 (D.C. Cir. 2004)
 - *Nat'l Mining Ass'n v. MSHA*, 512 F.3d 696 (D.C. Cir. 2008)
6. Are the rule's medical surveillance provisions authorized by the Mine Act, a rational decision, and adequately explained?

- 30 U.S.C. 811(a)(7)
- *Nat'l Min. Ass'n*, 812 F.3d 843

7. Did MSHA rationally determine, and adequately explain its decision, not to exclude sorptive minerals mines?

- 30 U.S.C. 811(a)(6)(A)
- *Nat'l Min. Ass'n*, 812 F.3d 843
- *State Farm*, 463 U.S. 29

Statement of the Case

1. Statutory background

“Congress enacted the [Mine Act] to promote the health and safety of miners, the mining industry’s ‘most precious resource.’” *Pattison Sand Co., LLC v. FMSHRC*, 688 F.3d 507, 509 (8th Cir. 2012) (quoting 30 U.S.C. 801(a)). Congress found “an urgent need to provide more effective means and measures for improving the working conditions and practices in the Nation’s coal or other mines in order to prevent death and serious physical harm, and in order to prevent occupational diseases originating in such mines.” 30 U.S.C. 801(c). Congress determined that “the existence of unsafe and unhealthful conditions and practices in the Nation’s coal or other mines is a serious impediment to the future growth of the coal or other mining industry and cannot be tolerated.” 30 U.S.C. 801(d). Accordingly, “the Mine Act evinces a clear bias in favor of miner health and safety.” *Nat’l*

Mining Ass’n v. Sec’y, U.S. Dep’t of Lab., 812 F.3d 843, 866 (11th Cir. 2016) (“*Coal Dust*”).

MSHA’s rulemaking authority comes from sections 101(a), 103(h), and 508 of the Mine Act. 30 U.S.C. 811(a), 813(h), 957. Section 101(a) requires MSHA to develop and promulgate improved mandatory health or safety standards to protect the health and safety of miners, including standards dealing with “toxic materials or harmful physical agents.” 30 U.S.C. 811(a)(6)(A). These standards must “most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life.” *Ibid.* In developing standards that attain the “highest degree of health and safety protection for the miner,” MSHA must consider the latest available scientific data in the field, the feasibility of the standards, and experience gained under the Mine Act and other health and safety laws. *Ibid.* As a result, courts “‘give an extreme degree of deference’” to MSHA “‘when it is evaluating scientific data within its technical expertise.’” *Coal Dust*, 812 F.3d at 866 (quoting *Kennecott Greens Creek Mining Co. v. MSHA*, 476 F.3d 946, 954 (D.C. Cir. 2007)). Moreover, MSHA’s “duty to use the

best evidence and to consider feasibility ... cannot be wielded as counterweight to MSHA's overarching role to protect the life and health of workers in the mining industry." *Ibid.* This is because "when MSHA itself weighs the evidence before it, it does so in light of its congressional mandate" in favor of protecting miners' health. *Ibid.*

2. Factual Background

2.1. Respirable crystalline silica

Respirable crystalline silica is a toxic airborne hazard that is released when mined materials are extracted from the ground and processed. App. ___, MSHA-2023-0001-1461, p.34 ("Health Effects"). Silica is a common component of rock made of silicon and oxygen, which appears in both crystalline and amorphous forms. 89 Fed. Reg. 28,218, 28,221 (Apr. 18, 2024). There are three kinds of crystalline silica: cristobalite, tridymite, and quartz. *Ibid.* The final rule regulates all three types of crystalline silica, but quartz is the most common, accounting for almost 12 percent of the Earth's crust. *Ibid.* Quartz is present in almost every type of mineral and "nearly all mining operations." *Ibid.* Most mining activities create respirable silica dust because silica is present in the material being mined, in the "overburden" (the soil and rock surrounding the material being mined), or both. *Ibid.*

Some crystalline silica is “occluded,” which means that substances like clay cover the surface of the silica particle. App. ___, Health Effects 49. Occlusion is common in sorptive minerals—absorbent clays— that can expand up to an eightfold increase in volume, making them useful in a wide range of products, including pet litter, pharmaceuticals, and cosmetics. App. ___, Health Effects 49.

Sorptive minerals occur in deposits beneath overburden (soil and rock), which contains unoccluded silica. 89 Fed. Reg. at 28,302. Miners are exposed to freshly fractured, unoccluded silica dust when they blast, drill, saw, and jackhammer through hard-rock overburden to extract the sorptive minerals, releasing airborne crystalline silica. *Id.* at 28,221. Sorptive minerals themselves also contain crystalline silica, which is released into the air as respirable crystalline silica during extraction and milling. App. ___, MSHA-2023-0001-1446, p.5; 89 Fed. Reg. at 28,256. After extraction, when sorptive minerals are milled to remove undesirable materials like silica-containing rock and dirt—which can include grinding, heating, crushing, and bagging, 89 Fed. Reg. at 28,236, 28,256— miners are further exposed to crystalline silica dust. See *id.* at 28,302.

2.2. Silica exposure health risks

Occupational exposure to respirable crystalline silica causes progressive, irreversible diseases that can be chronic, disabling, or fatal, such as silicosis, emphysema, chronic bronchitis, kidney disease, and lung cancer. App. ___, Health Effects 2. These health outcomes are exposure-dependent: exposure to higher concentrations of silica and longer exposures result in a greater likelihood of severe disease. *Id.* at 17. The effects of respirable crystalline silica exposure are also cumulative, which means that exposures add up over time. 89 Fed. Reg. at 28,238. This is because human lungs clear respirable crystalline silica slowly. *Id.* at 28,316 n.69. Silica is not soluble in water or the mucus lining in the respiratory tract, so respirable crystalline silica is cleared from the lungs slowly and incompletely. *Id.* at 28,235. The respirable crystalline silica that remains in the lungs causes inflammation, scarring, and fibrosis, and can cause lung cancer. App. ___, Health Effects 38, 42-43. Pulmonary scavenger cells can ingest small particles of respirable crystalline silica and transport them beyond the lungs, where they can damage the kidneys and the immune system. *Id.* at 45-47.

Respirable silica is much more toxic than coal dust, and its presence in thin coal seams is fueling a resurgence of black lung disease in underground coal miners in Appalachia, including severe disease in younger miners. App.

____, Health Effects 115-116; 89 Fed. Reg. at 28,273. The rule will save hundreds of miners' lives and prevent thousands of silica-related illnesses. 89 Fed. Reg. at 28,245.

3. Regulatory Background

MSHA has regulated respirable crystalline silica since the 1970s. 89 Fed. Reg. at 28,222. The previous standards for quartz in metal and nonmetal (MNM) mines³, including sorptive mineral mines, were designed to limit silica exposure to less than 100 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$). *Ibid.*; *id.* at 28,256. For cristobalite and tridymite, the limit was 50 $\mu\text{g}/\text{m}^3$. *Id.* at 28,223. The MNM mine standards included provisions for conducting respirable dust surveys and controlling exposures to respirable silica. 30 C.F.R. 56.5002, 56.5005, 57.5002, 57.5005.

Before this rule, there was no separate standard for respirable crystalline silica for coal mines. Instead, operators controlled silica indirectly by reducing respirable coal mine dust levels. 89 Fed. Reg. at 28,223. The limit for respirable crystalline silica in coal mines was 100 $\mu\text{g}/\text{m}^3$. 30 C.F.R. 70.101,

³ MSHA categorizes mines as either “coal” or “metal and nonmetal” (“MNM”). The “MNM” designation encompass all mines that are not coal mines, including metal, sand, gravel, and stone mines. Petitioners are membership organizations for MNM mine operators primarily, except NMA, which also represents coal mine operators.

71.101. The coal mine standards required quarterly sampling, exposure control, and medical surveillance. 89 Fed. Reg. at 28,223; 30 C.F.R. 70.208, 70.209, 71.206, 72.100, 90.207. Respirators were (and are) prohibited as a means of compliance with the silica limits. 30 U.S.C. 842(h).

MSHA published a Request for Information about respirable silica in 2019, 84 Fed. Reg. 45,452 (Aug. 29, 2019), and, in 2023, proposed a rule to reduce miners' exposure to silica by establishing a single 50 $\mu\text{g}/\text{m}^3$ PEL for all mines. 88 Fed. Reg. 44,852 (July 13, 2023). MSHA held three public hearings and received 157 comments on the proposal. 89 Fed. Reg. at 28,221.

3.1. The final rule

On April 18, 2024, MSHA published the final rule. 89 Fed. Reg. 28,218. MSHA also posted standalone documents, including a review of the health science literature, "Effects of Occupational Exposure to Respirable Crystalline Silica on the Health of Miners." App. ___, Health Effects.

The final rule established a 25 $\mu\text{g}/\text{m}^3$ action level and 50 $\mu\text{g}/\text{m}^3$ PEL for all MNM and coal mines. 89 Fed. Reg. at 28,313-28,315, 28,256. The rule requires operators to use engineering and certain administrative controls to achieve compliance with the PEL. 30 C.F.R. 60.11. To evaluate compliance with the PEL, operators must take air samples of either the "breathing

zones” (MNM) or the “occupational environments” (coal) of miners during their typical mining activities. 30 C.F.R. 60.12(e). Operators must perform regular qualitative evaluations to evaluate changes that could lead to new or increased silica exposures. 30 C.F.R. 60.12(c). Operators must immediately report overexposures to MSHA, ensure that their miners use approved respirators, and perform corrective actions to get below the PEL. 30 C.F.R. 60.12(b), 60.13. The rule updates respiratory protection standards for all regulated health hazards and creates a medical surveillance program for MNM miners informed by MSHA’s longstanding program for coal miners. 30 C.F.R. 60.14, 60.15. The rule also requires recordkeeping. 30 C.F.R. 60.16.

In response to comments, MSHA made changes from the NPRM, including extending the compliance dates, 89 Fed. Reg. at 28,310-28,311; eliminating the option for mine operators to use “objective data” to confirm initial sampling results, *id.* at 28,322-28,323; updating respiratory protections, *id.* at 28,335-28,336; and providing for a wider range of health care professionals qualified to conduct medical surveillance, *id.* at 28,340-28,341.

3.1.1 The hierarchy of controls

The rule requires mine operators to use “feasible engineering controls, supplemented by administrative controls when necessary, to keep each miner’s exposure at or below the PEL, except as specified in § 60.14.” 30 C.F.R. 60.11(a). This reflects NIOSH’s “hierarchy of controls,” a “generally accepted industrial hygiene principle” that recommends a certain order of controls from most to least effective: (1) elimination of the hazard, (2) engineering controls, (3) administrative controls, and (4) personal protective equipment, like respirators. 89 Fed. Reg. at 28,321. MSHA has a longstanding practice of incorporating hierarchy of controls principles into its exposure-based health standards. See, *e.g.*, 71 Fed. Reg. 28,924, 28,926 (May 18, 2006) (explaining that MSHA’s diesel particulate matter standard “requires MSHA’s longstanding hierarchy of controls that is used for other MSHA exposure-based health standards at M/NM mines, but retains the prohibition on rotation of miners for compliance”).

Engineering controls are things like ventilation systems, enclosed cabs, and water sprays designed to keep silica dust from entering the air that miners breathe. 89 Fed. Reg. at 28,282-28,283. Administrative controls include work practices like training miners to stand upwind when drilling

rock. *Id.* at 28,283. “Prioritizing engineering controls” over the use of administrative controls and personal protective equipment (like respirators), for compliance with the PEL, as the final rule does, “is consistent with [these] accepted industrial hygiene principles.” *Id.* at 28,319-28,320.

Rotation of miners

Miner rotation is an administrative control where a mine operator assigns more than one miner to a high-exposure task or location and rotates them in and out to keep each miner’s exposure, based on a time-weighted average, at or below the permissible level for that hazard. 89 Fed. Reg. at 28,300. MSHA acknowledges that miner rotation “may be an appropriate control to minimize musculoskeletal stress or heat stress,” and may be “deemed appropriate by the mine operator in activities such as cross-training or to allow workers to alternate physically demanding tasks with less strenuous activities.” *Id.* at 28,319.

But, consistent with other MSHA health standards addressing exposure to diesel particulate matter and respirable coal mine dust, MSHA prohibited miner rotation for the purposes of compliance with the PEL because “it does not address the root cause of the hazard, requires continuous attention and actions on the part of miners and management, and increases risks to

additional miners.” 89 Fed. Reg. at 28,319. MSHA determined that other available administrative controls can effectively supplement engineering controls to prevent exposures above the PEL. *Id.* at 28,287. MSHA clarified that “this provision is not a general prohibition of worker rotation wherever workers are exposed to respirable crystalline silica and is intended only to prohibit its use as a compliance method for the PEL.” *Id.* at 28,319.

Respirators

The final rule requires mine operators to use “feasible engineering controls, supplemented by administrative controls when necessary, to keep each miner’s exposure at or below the PEL, except as specified in § 60.14.” 30 C.F.R. 60.11(a). Consistent with existing 30 C.F.R. 56/57.5005, section 60.14(a) requires MNM mine operators to use respirators as a temporary measure while working in concentrations above the PEL when “[e]ngineering control measures are being developed and implemented” or when “necessary by the nature of work involved[.]” 30 C.F.R. 60.14(a)(1)-(2).

MSHA prohibited use of respirators as a means of compliance with the PEL because respirators are not as effective as engineering and administrative controls at keeping miners safe. 89 Fed. Reg. at 28,337.

“[W]ithout a proper fit, dust particles enter the miner’s breathing zone; (2)

inconsistent or incorrect use can compromise the effectiveness of the respirator; and (3) respirators can hinder effective communication among miners.” *Ibid.*

3.1.2 Sampling

Operators must take initial air samples for miners who are reasonably expected to be exposed to respirable crystalline silica. 30 C.F.R. 60.12(a), (e). If the initial samples show exposure below the action level, operators must sample once more within three months. 30 C.F.R. 60.12(a)(2)(i). If the second sample also shows exposures below the action level, operators need not sample again but must perform periodic evaluations of silica exposure and re-sample if those evaluations indicate exposure at the action level or above. 30 C.F.R. 60.12(a)(4), 60.12(c).

Many different types of samplers are available. 89 Fed. Reg. at 28,331. One common sampler is called a “cyclone.” *Ibid.* These samplers use a “rapid vortical flow of air,” which separates larger dust particles from smaller, respirable ones. *Ibid.* A filter captures the respirable particles. *Ibid.* MSHA uses a 10 mm nylon Dorr-Oliver cyclone sampler, but operators may use any sampler that conforms to international consensus standard ISO

7708:1995(E), “Air quality—Particle size fraction definitions for health-related sampling.” *Id.* at 28,330-28,331; 30 C.F.R. 60.12(e)(4).

Samples are sent to a lab for analysis. 89 Fed. Reg. at 28,332. Operators may use any lab accredited under international consensus standard ISO/IEC 17025, “General requirements for the competence of testing and calibration laboratories.” 30 C.F.R. 60.12(f)(1). Labs must evaluate silica samples using a method specified by MSHA, NIOSH, or OSHA. 30 C.F.R. 60.12(f)(2). These methods include X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (IR). 89 Fed. Reg. at 28,333. Both XRD and IR can precisely measure respirable crystalline silica in airborne concentrations around the action level and PEL. *Id.* at 28,312, 28,317.

The proposed rule would have allowed mine operators to discontinue sampling after taking only one sample below the action level if they confirmed that sample with “objective data” indicating that miner exposures are below the action level. 88 Fed. Reg. at 45,012. “Objective data” was defined as “information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating miner exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity.” *Ibid.*

To be used as confirmation of a miner's exposure below the action level, the data was required to "reflect mining conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the operator's current operations." *Ibid.*

Under the final rule, however, operators may discontinue sampling only when two consecutive samples show that miners are exposed below the action level. 30 C.F.R. 60.12(a)(4). In response to comments, MSHA removed the objective-data option because such data are "not likely to represent mining conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the mine operator's current operations." 89 Fed. Reg. at 28,323. Instead, MSHA concluded that "sampling is more accurate" to measure how much silica miners are actually exposed to. *Ibid.*

Under the previous standards, MSHA performed respirable dust sampling at both MNM and coal mines and analyzed samples for respirable crystalline silica. 89 Fed. Reg. at 28,224. It will continue to do so. *Id.* at 28,323.

3.1.3 Medical surveillance

The final rule creates a medical surveillance program for MNM miners, giving them the opportunity to monitor their health for early signs of disease.

89 Fed. Reg. at 28,219. Mine operators must periodically provide no-cost medical examinations to MNM miners. 30 C.F.R. 60.15(a). For miners new to the mining industry, exams are mandatory. 30 C.F.R. 60.15(c). For all other miners, exams are voluntary. 30 C.F.R. 60.15(b). Exams must include a medical and work history, a physical examination, a chest X-ray, and a pulmonary function test. 30 C.F.R. 60.15(a)(2). The chest X-ray must then be classified by a NIOSH-certified B Reader, in accordance with the Guidelines for the Use of the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses. 30 C.F.R. 60.15(a)(2)(iii). Miners receive their full examination results, which they may share with a designated physician or another person of their choosing. 30 C.F.R. 60.15(d)(1).

The NPRM proposed that “the results of medical examinations or tests ... shall be provided only to the miner, and at the request of the miner, to the miner’s designated physician.” 88 Fed. Reg. at 45,014. MSHA sought comment on “the differences between the medical surveillance requirements

for MNM operators in this proposed rule and the existing medical surveillance requirements for coal mine operators in [30 C.F.R.] § 72.100,” which requires X-ray classifications be sent to NIOSH. *Id.* at 44,857. MSHA also sought “comment on how, and to whom, test results should be communicated” under the final rule. *Ibid.* Several commenters suggested that MSHA include in the final rule a requirement that X-ray results be sent to NIOSH. See App. ___, MSHA-2023-0001-1410, pp.7-8 (commenting that medical examination results should be reported to NIOSH so that MSHA can monitor the effectiveness of dust controls and suggesting that MSHA create a repository for all screening results accessible to health care providers that can help detect early disease); App. ___, MSHA-2023-0001-1398, p.14 (commenting that “MSHA should work with NIOSH in expanding the Coal Workers Health Surveillance Program’s mobile unit to screen MNM miners as well or create a new Health Surveillance Program mobile units targeting MNM miners”). Petitioner NSSGA, on the other hand, suggested that MSHA should provide X-ray classifications to mine operators. App. ___, MSHA-2023-0001-1448, p.4 (“operators must receive results of medical exams pertaining to silica health effects, including the results of the ILO reading of the chest x-ray and the pulmonary function testing results”), p.25

(“At a minimum, MSHA should ensure that mine operators receive ILO classifications of readings”).

In response to comments, MSHA added a requirement that the PLHCP or specialist provide NIOSH with a miner’s chest X-ray classification to develop public health information about respiratory illness in the MNM mining sector. 89 Fed. Reg. at 28,345. MSHA prohibits X-ray classifications from being provided to mine operators unless a miner requests it. *Id.* at 28,344.

Summary of the Argument

MSHA need not find “significant risk” before regulating toxic health hazards. Petitioner Sorptive Minerals Institute (SMI) argues that the Supreme Court has interpreted the Occupational Safety and Health Act of 1970 as requiring OSHA to find significant risk. *Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607 (1980) (plurality op.) (“*Benzene*”). But that holding was based on specific language in the OSH Act that the Mine Act does not contain.

MSHA rationally determined that the 50 µg/m³ silica PEL is feasible for all mines, even with the rule’s prohibitions on rotation of miners and respirator use for compliance. The rulemaking record supports MSHA’s

findings that most mines already are compliant with the rule and that other mines will be able to maintain or repair existing engineering or administrative controls, or implement a mix of those controls, to come into compliance.

MSHA rationally decided to prohibit miner rotation for compliance with the PEL. The rulemaking record supports MSHA's determination that rotation does not address the root cause of the hazard and simply exposes more miners to toxic silica dust. The prohibition against rotation is consistent with MSHA's similar prohibitions for respirable coal dust and diesel particulate matter.

MSHA rationally decided to prohibit respirator use for compliance with the PEL, supporting its decision with the rulemaking record and commonsense conclusions that respirators have limitations that prevent them from effectively protecting miners. The rule's approach to respirators is consistent with other MSHA airborne-contaminant standards.

MSHA rationally decided not to impose a one-size-fits-all error factor for samples, given that operators may use different samplers and laboratories, each of which have different and as-yet-unknown error factors.

MSHA rationally required operators to obtain a second sample below the action level to discontinue periodic sampling, instead of allowing operators to

use objective data in lieu of a second sample as the proposed rule would have allowed. Commenters agreed that objective data are unlikely to represent mining conditions closely resembling current operations and that sampling is more accurate.

The Mine Act authorizes the rule's medical surveillance provisions for all miners because miners, collectively, are exposed to silica. MSHA rationally determined that medical surveillance requirements are the most effective means to identify threats to miners' health. Further, MSHA's finding that adequate supplies of X-ray tests and B Readers exist was rational, supported by comments, and adequately explained. The rule also rationally requires that X-ray classifications be sent to NIOSH—a logical outgrowth of the NPRM, which requested comments on who should receive results.

MSHA considered the best available evidence about the toxicity of silica in sorptive minerals and rationally decided not to exclude sorptive mineral mines. Sorptive mineral miners are exposed to respirable crystalline silica. While some evidence exists that the occluded silica contained in sorptive minerals is less toxic than unoccluded silica, it is unclear how this lower toxicity relates to disease risk, and MSHA rationally chose protection. Importantly, sorptive mineral miners are exposed not only to the occluded

silica in sorptive mineral deposits, but also to unoccluded silica in the rock and soil surrounding the deposits.

If this Court holds any provision of the rule is unsupported, it should remand that provision to MSHA without vacatur so MSHA may remedy any deficiency. If this Court vacates any provision, it should sever that provision and affirm the rest of the rule because the rule can function sensibly without any of the challenged provisions.

Argument

1. Standard of review

1.1. Agency action generally

A reviewing court may set aside an agency action only if the action is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.” 5 U.S.C. 706(2)(A). Judicial review under this standard is “deferential,” and the scope of review is “narrow.” *Dep’t of Commerce v. New York*, 588 U.S. 752, 773 (2019); see also *Adventist Health Sys./SunBelt, Inc. v. Dep’t of Health & Hum. Servs.*, 17 F.4th 793, 803 (8th Cir. 2021). “The role of courts in reviewing arbitrary and capricious challenges is to simply ensur[e] that the agency has acted within a zone of reasonableness.” *Biden v. Missouri*, 595 U.S. 87, 96 (2022) (quotation omitted). And although an agency’s decision is arbitrary and capricious if “the agency has relied on factors which

Congress has not intended it to consider” or “entirely failed to consider an important aspect of the problem,” *McClung v. Paul*, 788 F.3d 822, 828 (8th Cir. 2015) (quoting *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)), the Court determines “only whether the [agency] examined the relevant data and articulated a satisfactory explanation for [its] decision, including a rational connection between the facts found and the choice made.” *Dep’t of Commerce*, 588 U.S. at 773 (quotation omitted).

The reviewing court cannot “substitute its judgment for that of the agency.” *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 513 (2009) (quotation omitted); see also *Pub. Citizen Health Rsch. Grp. v. Tyson*, 796 F.2d 1479, 1495 (D.C. Cir. 1986) (“[W]e do not reweigh the evidence and come to our own conclusion; rather, we assess the reasonableness of [the agency’s] conclusion.”). “This is particularly true when the resolution of the dispute involves primarily issues of fact and analysis of the relevant information requires a high level of technical expertise by an agency acting within its sphere of expertise.” *Adventist Health*, 17 F.4th at 803-804 (quotation omitted). Even if an agency’s decision is of “less than ideal clarity,” a court

must uphold the decision “if the agency’s path may reasonably be discerned.” *FCC*, 556 U.S. at 513 (quotation omitted).

NSSGA argues, incorrectly, that the standard of review is that the rule must be supported by substantial evidence. NSSGA Br. 17. Section 706(2)(A) of the APA, which calls for courts to set aside actions that are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” applies to informal rulemakings. 5 U.S.C. 706(2)(A); *Ark. Pharmacists Ass’n v. Harris*, 627 F.2d 867, 870 (8th Cir. 1980). Section 706(2)(E) provides for a substantial evidence test for cases “subject to sections 556 and 557 of [title 5] or otherwise reviewed on the record of an agency hearing provided by statute”—conditions not applicable here.

1.2. Changes from the proposed rule

An agency must provide interested parties with adequate notice of and an opportunity for comment on the provisions that appear in the agency’s final rule. *Mock v. Garland*, 75 F.4th 563, 583 (5th Cir. 2023); see also 5 U.S.C. 553(b), (c); 30 U.S.C. 811(a)(2). But “an agency’s final rules are frequently different from the ones it published as proposals” because “[a]gencies often adjust or abandon their proposals in light of public comments or internal agency reconsideration.” *Nat’l Mining Ass’n v. MSHA*,

512 F.3d 696, 699 (D.C. Cir. 2008) (quotation omitted). The object is “fair notice.” *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 174 (2007). An agency satisfies that requirement as long as “the final rule the agency adopts [is a] logical outgrowth of the rule proposed.” *Firearms Regul. Accountability Coal., Inc. v. Garland*, 112 F.4th 507, 519 n.13 (8th Cir. 2024) (quoting *Long Island*, 551 U.S. at 174). A “rule is deemed to constitute a logical outgrowth of the proposed rule” if “interested parties ‘should have anticipated that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period[.]’” *Mock*, 75 F.4th at 583 (quotation omitted). To satisfy the notice requirement, “an NPRM is not required to ‘specifically identify every precise proposal which the agency may ultimately adopt as a final rule.’” *Ibid.* (quotation omitted). “Instead, an NPRM must ‘adequately frame the subjects for discussion such that the affected party should have anticipated the agency’s final course in light of the initial notice.’” *Ibid.* (quotation omitted).

An agency’s decision to change course in a final rule is reviewed deferentially, because the purpose of notice-and-comment is to allow an agency to consider alternative viewpoints and decide whether those perspectives should be included in the final rule. “Agencies are free—

indeed, they are encouraged—to modify proposed rules as a result of the comments they receive.” *Northeast Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936, 951 (D.C. Cir. 2004) (citation omitted).

1.3. Statutory interpretation

“This court reviews de novo issues of statutory interpretation.” *Behlmann v. Century Sur. Co.*, 794 F.3d 960, 963 (8th Cir. 2015). It “begin[s] with the statute’s plain language, giving words the meaning that proper grammar and usage would assign them. If the intent of Congress can be clearly discerned from the statute’s language, the judicial inquiry must end.” *United States v. Lester*, 92 F.4th 740, 742 (8th Cir. 2024) (quotation omitted). If there are “statutory ambiguities ... courts use every tool at their disposal to determine the best reading of the statute and resolve the ambiguity.” *Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 373 (2024).

2. The Mine Act does not require MSHA to find “significant risk” before regulating.

SMI argues that because the Supreme Court has held that OSHA must find “significant risk” before regulating, MSHA must, too. SMI Br. 14-38. But the Mine Act has materially different statutory language and legislative history that do not parallel the OSH Act’s.

2.1. “Significant risk” is a requirement based in the OSH Act’s text and legislative history; it does not apply to MSHA.

The Supreme Court developed the “significant risk” test in a case specific to the OSH Act’s requirement that OSHA promulgate mandatory safety and health standards that are “reasonably necessary or appropriate to provide safe or healthful employment and places of employment.” 29 U.S.C. 652(8); *Benzene*, 448 U.S. at 614-615.⁴ *Benzene* concerned an OSHA standard that sought to regulate occupational exposure to benzene under Section 6(b)(5) of the OSH Act. The standard set the exposure limit for benzene at the “lowest technologically feasible level that w[ould] not impair the viability of the industries regulated.” *Benzene*, 448 U.S. at 613. However, the Court held that before OSHA can promulgate any mandatory occupational safety or health standards under the OSH Act, it must “make a threshold finding that a place of employment is unsafe—in the sense that *significant risks* are present and can be eliminated or lessened by a change in practices.” *Id.* at 642 (emphasis added).

The Court began with the statutory language. Section 3(8) of the OSH Act defines “occupational safety and health standard” as a “standard which

⁴ A majority of the Court adopted the significant risk requirement in *Am. Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 505 n.25 (1981).

requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide *safe* or healthful employment and places of employment.” 29 U.S.C. 652(8) (emphasis added). The Court then “derived its requirement of a threshold finding of ‘significant risk’ from the term ‘safe,’ [as required by Section 3(8)] which it reasoned did not mean ‘risk-free.’” *Nat’l Mining Ass’n v. United Steel Workers*, 985 F.3d 1309, 1316-1317 (11th Cir. 2021) (“*Exams*”) (quoting *Benzene*, 448 U.S. at 642).

Further, the Court found that the OSH Act’s legislative history supported the “significant risk” requirement: “Congress was concerned, not with absolute safety, but with the elimination of significant harm.” *Benzene*, 448 U.S. at 646. The Court noted that the “examples of industrial hazards referred to in the Committee hearings and debates all involved situations in which the risk was unquestionably significant.” *Ibid.* (discussing S. Rep. No. 91-1282, at 3-4 (1970) (“OSH Act Senate Report”)).

This requirement does not apply to the Mine Act because it has materially different statutory language and legislative history.

2.2. The Mine Act does not contain the statutory text that requires OSHA to find “significant risk.”

OSHA and MSHA are often referred to as “sister” agencies because both agencies share the common goal of ensuring workplace safety and health. See, e.g., *Oil, Chem. & Atomic Workers Int’l Union v. Zegeer*, 768 F.2d 1480, 1486 n.8 (D.C. Cir. 1985). But the agencies, and their respective statutes, are not the same; MSHA’s enforcement is more pervasive. *Donovan v. Dewey*, 452 U.S. 594, 601-606 (1981). Congress recognized that mining “is of a nature that is so unique, so complex, and so hazardous as to not fit neatly under the Occupational Safety and Health Act.” H.R. Rep. No. 95-312, at 1 (1977) (House Report). And given “Congress’ belief that mines are by their nature very dangerous ... ‘the Mine Act evinces a clear bias in favor of miner health and safety.’” *Exams*, 985 F.3d at 1318 (quoting *Coal Dust*, 812 F.3d at 866).

The OSH Act and the Mine Act are “differently worded statute[s]” in relevant respects. *Nat’l Mining Ass’n v. MSHA*, 116 F.3d 520, 527 (D.C. Cir. 1997). The Supreme Court concluded that the OSH Act contains a “significant risk” requirement based on the language of OSH Act section 3(8), which requires that standards be “reasonably necessary or appropriate

to provide safe or healthful employment and places of employment.”

Benzene, 448 U.S. at 642 (quoting 29 U.S.C. 652(8)).

SMI claims that when Congress passed the Mine Act, it “cop[ied]” the language that the Supreme Court interpreted to “imply a ‘significant risk’ prerequisite.” SMI Br. 22. But the Mine Act has no such language.

Instead, in section 3(l) of the Mine Act, Congress defines “standard” as “the interim mandatory health or safety standards established by ... this Act and the standards promulgated pursuant to ... this Act.” 30 U.S.C. 802(l). Section 101(a) requires the Secretary to develop and promulgate “improved mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines.” 30 U.S.C. 811(a). It does not require the Secretary to promulgate standards that are “reasonably necessary” to provide “safe or healthful” workplaces. Importantly, the requirement that that standards promulgated under the Mine Act be “improved” and “for the protection of life and prevention of injuries in coal or other mines,” was copied almost verbatim from the Federal Coal Mine Health and Safety Act of 1969 (“Coal Act”), which, like the OSH Act, was passed by the 91st Congress. See Pub. L. No. 91-173, 83 Stat. 742 (1969) (Coal Act); Pub. L. No. 91-596, 84 Stat. 1590 (1970) (OSH Act). Because both statutes were

passed by the same Congress for the similar purpose of protecting workers' safety and health, this Court must presume that this difference in language conveys a difference in meaning. See *Wisconsin Cent. Ltd. v. United States*, 585 U.S. 274, 279 (2018) (“We usually presume differences in language like this convey differences in meaning. And that presumption must bear particular strength when the same Congress passed both statutes to handle much the same task.”) (quotations omitted). This difference should be accorded “respect, not disregard.” *Ibid.*; see also SMI Br. 31 (acknowledging that this “change in wording signals some difference in meaning.”).

When the 95th Congress passed the Mine Act in 1977, it could have required the Secretary to promulgate standards under the Mine Act (1) that are “improved mandatory health or safety standards for the protection of life and prevention of injuries,” like the Coal Act, or (2) that are “reasonably necessary ... to provide safe ... employment,” like the OSH Act. Congress decided to incorporate the Coal Act’s standard, which, by implication, means that Congress did not intend to incorporate the OSH Act’s standard. See *Union Pac. R.R. Co. v. United States*, 865 F.3d 1045, 1050 (8th Cir. 2017) (“[W]hen Congress does not adopt obvious alternative language, the natural

implication is that it did not intend the alternative.”); *Lozano v. Montoya Alvarez*, 572 U.S. 1, 16 (2014) (same).

“Congress knows how to employ the word ‘safe’ in a regulatory statute; the fact that it did not use the word in the Mine Act suggests it intended some materially different standard.” *Exams*, 985 F.3d at 1317. This point is bolstered given that Congress mirrored language between the OSH Act and the Mine Act when it intended to. Compare 29 U.S.C. 655(b)(5) with 30 U.S.C. 811(a)(6)(A); see *United States v. Bruguier*, 735 F.3d 754, 766 (8th Cir. 2013) (“Such language demonstrates that Congress knows how to achieve a particular result when it desires such a result.”) (cleaned up). Congress chose not to require standards under the Mine Act to be “reasonably necessary or appropriate to provide safe and healthful employment,” when it demonstrably knew how. See *United States v. Talley*, 83 F.4th 1296, 1304 (11th Cir. 2023) (“Where Congress knows how to say something but chooses not to, its silence is controlling.”) (cleaned up).

In sum, because the Mine Act does not contain the statutory requirement that standards be “reasonably necessary” to provide “safe” employment—the phrases from which the Supreme Court derived the “significant risk” requirement—the Mine Act contains no “significant risk” requirement.

2.3. Other statutory provisions do not require MSHA to find “significant risk.”

SMI argues that because the Mine Act Section 101(a)(6)(A) and OSH Act Section 6(b)(5)—the provisions authorizing their respective agencies to regulate toxic materials—are similarly worded, the “significant risk” requirement applies to MSHA. SMI Br. 18-22. The OSH Act provides: “The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.” 29 U.S.C. 655(b)(5). The Mine Act is identical, except for omitting “to the extent feasible.” 30 U.S.C. 811(a)(6)(A).

But this similarity between Mine Act section 101(a)(6)(A) and OSH Act section 6(b)(5) has nothing to do with significant risk because the Court derived the significant risk requirement from a different OSH Act section, 3(8). *Benzene*, 448 U.S. at 642. In fact, the Court explicitly rejected the assertion made by dissenting Justice Marshall that section 6(b)(5) should be the statutory basis for the significant risk requirement. *Id.* at 643 n.48.

SMI also cites *Pollard v. E.I. du Pont de Nemours & Co.*, 532 U.S. 843, 848 (2001) and *Communication Workers of America v. Beck*, 487 U.S. 735, 744-745 (1988), to argue that OSH Act Section 6(b)(5) and Mine Act Section 101(a)(6)(A) must be interpreted similarly. SMI Br. 20-21; see also SMI Br. 20 (quoting Scalia & Garner, *Reading Law: The Interpretation of Legal Texts* 323 (2012), for the same proposition that “[i]f a statute uses words or phrases that have already received authoritative construction by the jurisdiction’s court of last resort ... they are to be understood according to that construction.”). In those cases, the Supreme Court interpreted statutory language in light of how it had interpreted similar language in other statutes. *Pollard*, 532 U.S. at 848-851 (comparing language regarding remedies in the Civil Rights Act of 1964 and the NLRA); *Beck*, 487 U.S. at 744-747 (comparing language regarding exaction of union dues and fees in the NLRA and Railway Labor Act). But they are inapposite because the Mine Act does not contain the language in the OSH Act that the Supreme Court interpreted to require a finding of significant risk.

SMI argues that Section 101(a)(6)(A) of the Mine Act “signal[s]” that a significant risk requirement should be incorporated into the Mine Act because the Court in *Benzene* found the terms “toxic” and “harmful” to

mean “significant risk.” SMI Br. 22-23. But that is not the analysis of the Court. The Court never said that “toxic” and “harmful” means “significant risk.” Rather, the Court explained that a finding under Section 6(b) that a substance is toxic is a secondary step that occurs after the Secretary makes a threshold finding of significant risk under Section 3(8). *Benzene*, 448 U.S. at 643 n.48.

SMI argues that, because the Mine Act’s purpose is “to protect the health and *safety* of miners,” “the Mine Act does indeed make ‘safe’ the standard, just like the OSH Act.” SMI Br. 30-31 (quoting 30 U.S.C. 801(g)(1)). But just because the Mine Act regulates “safety” does not mean that the Secretary must make a threshold finding of significant risk. If that were true, the Supreme Court would have derived the significant risk requirement from the Congressional statement of findings and declaration section of the OSH Act, which also states that one purpose of the Act is to authorize the Secretary to set “*safety* and health standards[.]” 29 U.S.C. 651(b)(3) (emphasis added). But the Supreme Court did not, and instead derived the significant risk requirement from Section 3(8)’s requirement that standards promulgated under the OSH Act be “*reasonably necessary* or appropriate to provide *safe* and healthful employment.” *Benzene*, 448 U.S. at 642 (emphasis added).

SMI also argues that Section 101(a)'s requirement that standards be "improved" is similar to OSH Act Section 6(b)(8)'s requirement that a standard must "better effectuate" the purposes of the OSH Act, and thus "provides the same sort of limitation that *Benzene* found in the OSH Act's definition of 'standard.'" SMI Br. 24. But again, this argument is based on an erroneous reading of *Benzene*. The Court noted that OSH Act Section 6(b)(8)'s "better effectuate" requirement "lends additional support" to the Court's conclusion that Section 3(8) requires a threshold finding of significant risk, *Benzene*, 448 U.S. at 644-645, but Section 6(b)(8) only *supported* the Court's adoption of a threshold "significant risk" requirement; it was not the statutory basis for that holding. Regardless, the term "improved" in the Mine Act does not support a significant risk requirement as did "better effectuate" in the OSH Act. Congress adopted the Coal Act's requirement that the Secretary promulgate "improved" standards, 30 U.S.C. 801(g) (1976), not the OSH Act's requirement that the Secretary promulgate standards that "better effectuate" the purposes of the Act. See *Wisconsin Cent. Ltd.*, 585 U.S. at 279; *Union Pac. R.R. Co.*, 865 F.3d at 1050.

Other Mine Act provisions confirm that MSHA need not find "significant risk." The Mine Act is premised on the principle that work in a

mine is inherently unsafe: Congress recognized “the existence of unsafe and unhealthful conditions and practices in the Nation’s coal or other mines” in Section 2(d), 30 U.S.C. 801(d), and in Section 2(c), declared that “there is an urgent need to provide more effective means and measures for improving the working conditions and practices in the Nation’s coal or other mines in order to prevent death and serious physical harm, and in order to prevent occupational diseases originating in such mines.” 30 U.S.C. 801(c). Thus, Congress has, in effect, already made a threshold finding of “significant risk” against which MSHA promulgates all standards. See *Exams*, 985 F.3d at 1318 (discussing “Congress’ belief that mines are by their nature very dangerous”); cf. 29 U.S.C. 651 (no such findings in the OSH Act).

Both courts of appeals to consider the question have concluded that MSHA need not find significant risk. In a case involving the examination of MNM working places, petitioners argued that the “significant risk” holding in *Benzene* should apply, despite the difference in statutory language, because the phrase “protection of life and prevention of injuries” under the Mine Act is “the functional equivalent” to the word “safe” under the OSH Act. *Exams*, 985 F.3d at 1317. The Eleventh Circuit rejected this argument because “Congress knows how to employ the word ‘safe’ in a regulatory

statute; the fact that it did not use the word in the Mine Act suggests it intended some materially different standard.” *Ibid.* The court also found that the phrase “protection of life and prevention of injuries” is “both stronger and more specific than ‘safe’” because “[o]ne could reasonably say that a hypothetical situation entails a small enough risk of harm that one could not deem a workplace ‘unsafe,’ but still would pose some risk of injuries that could be appropriately lessened with an improved standard that would impose little or no burden on the industry.” *Ibid.*

The D.C. Circuit likewise rejected any “significant risk” requirement. In *National Mining Association v. MSHA*, a challenge to an MSHA standard regulating underground coal mines by (in part) setting minimum oxygen levels, the court rejected the “contention that the agency was required to demonstrate that an oxygen standard of 18 percent would have posed a significant risk to miners. The 19.5 percent standard is permissible even without a significant risk that miners would be endangered by oxygen levels of 18 percent.” 116 F.3d at 527. The court looked to Section 101(a) of the Mine Act and found that this statutory language “[a]rguably ... does not mandate the same risk-finding requirement as OSHA.” *Ibid.* It noted that,

“‘[a]t most, ... [MSHA] was required to identify a significant risk associated with having no ... standard at all.’” *Id.* at 528.

SMI asserts that in *Kennecott*, the D.C. Circuit “assumed” that the Secretary must demonstrate significant risk under the Mine Act. SMI Br. 38. But the D.C. Circuit said that only that “MSHA must show that the substance being regulated presents a risk of ‘material impairment of health or functional capacity’ for miners who are regularly exposed to the substance.” *Kennecott*, 476 F.3d at 952 (quoting 30 U.S.C. 811(a)(6)(A)). It quoted its previous statements that “[a]t most ... the agency was required to identify a significant risk associated with having no oxygen standard at all,” and that MSHA “was entitled to err on the side of overprotection by setting a fully adequate margin of safety.” *Ibid.* (quoting *Nat’l Mining*, 116 F.3d at 528). And although the D.C. Circuit concluded that MSHA demonstrated that the hazard in that case, diesel particulate matter (DPM), posed a significant risk, *ibid.*, it did not conclude the Mine Act required MSHA to do so.

Likewise, SMI argues that because MSHA found in in the DPM rule that DPM posed a “significant risk,” it must make that finding before promulgating any standard. SMI Br. 39. But the fact that MSHA found that

DPM posed a certain level of risk is irrelevant to whether the Mine Act requires MSHA to find significant risk.

2.4. The Mine Act’s legislative history does not support requiring MSHA to find “significant risk.”

In *Benzene*, the Supreme Court also examined the legislative history of the OSH Act to support its conclusion that OSHA must find “significant risk.” The Court found support in Congress’ “concern about allowing the Secretary to have too much power over American Industry,” highlighting its “refus[al] to give the Secretary the power to shut down plants unilaterally because of imminent danger.” *Benzene*, 448 U.S. at 651. It also discussed Congress’ concern about regulating hazards that were “unquestionably significant,” such as diseases that affected as many as 30% of workers in a particular sector. *Id.* at 646 (quoting OSH Act Senate Report 3-4).

But Congress had the opposite concerns when enacting the Mine Act. Specifically, before the Mine Act, the Department of the Interior was responsible for both increased mineral production and miner safety and health. These conflicting demands “were being resolved at the expense of the miners.” House Report 5. Congress transferred responsibility for mine safety and health to the Department of Labor to “put[] the welfare of workers above all other considerations.” *Id.* at 2. And Congress authorized

MSHA—unlike OSHA—to unilaterally shut down the affected part of a mine when MSHA finds “an imminent danger exists.” 30 U.S.C. 817(a).

Likewise, Congress did not focus only on “reducing” health and safety risks in mining like it did in the OSH Act. See OSH Act Senate Report 1 (the purpose of the OSH Act was “to reduce the number and severity of work-related injuries and illnesses[.]”). Rather, Congress has consistently approached mine safety legislation differently—with the intent to “eliminate” the hazards and diseases present in the mining industry. See S. Rep. No. 91-411, at 13 (1969) (report on the Federal Coal Mine Health and Safety Act of 1969) (“the committee is convinced that [the hazards present in mining] can be substantially reduced or eliminated”); see also H.R. Rep. No. 89-606, at 8 (1965) (report on the Federal Metal and Nonmetallic Mine Safety Act) (“The Committee is strongly of the opinion that this crippling and often fatal disease [silicosis], which clearly can be controlled and even eliminated by adequate dust-control measures, should be attacked by the adoption of simple, effective, and enforceable dust-control standards.”). Thus, Congress was concerned not with eliminating only “significant risks” in the nation’s mines but with eliminating all hazards and diseases that plagued the mining industry.

The Eleventh Circuit cited this legislative history—and its differences to that of the OSH Act—in holding that the Mine Act does not require MSHA to find “significant risk.” *Exams*, 985 F.3d at 1319. The court underscored that the “context of the workplaces affected by the Mine Act is ... very different from the workplaces affected by the OSH Act,” because the Court in *Benzene* “emphasized the fact that the OSH Act had a pervasive impact on workplaces all across American industry, whereas the Mine Act affects only workplaces in coal and other mines, which Congress recognized as being especially vulnerable to safety and health risks.” *Id.* at 1318. The Eleventh Circuit also found “some evidence in the statute that Congress has made a legislative judgment that mines are *inherently* unsafe.” *Ibid.* (citing 30 U.S.C. 801(c), (d)). The court found these congressional findings “indicative of Congress’ belief that mines are by their very nature very dangerous” and were “in accord with [the Eleventh Circuit’s] previous conclusion that ‘the Mine Act evinces a clear bias in favor of miner health and safety.’” *Ibid.* (quoting *Coal Dust*, 812 F.3d at 866).

2.5. Congress properly delegated the Secretary’s authority to promulgate standards under the Mine Act.

SMI argues that if this Court does not read the Mine Act as requiring MSHA to find “significant risk,” the statute’s delegation of authority to MSHA to

promulgate standards is an unconstitutional delegation of legislative power. SMI Br. 25-27. It reasons that allowing OSHA to regulate without “sufficiently quantify[ing]” “the risk from a toxic substance ... to characterize it as significant in an understandable way,” *Benzene*, 448 U.S. 645-646, “‘*might*’” render the delegation unconstitutional. SMI Br. 25-27 (quoting 448 U.S. 645-646) (emphasis added).

The Mine Act does not present a nondelegation question. For a delegation of authority to be constitutional, Congress must “lay down by legislative act an intelligible principle to which the person or body authorized to exercise the delegated authority is directed to conform.” *Mistretta v. United States*, 488 U.S. 361, 372 (1989) (quotation omitted) (cleaned up). “The standards for that principle are not demanding.” *Gundy v. United States*, 588 U.S. 128, 130 (2019) (plurality op.). It is “constitutionally sufficient if Congress clearly delineates the general policy, the public agency which is to apply it, and the boundaries of this delegated authority.” *Mistretta*, 488 U.S. at 372-373 (quotation omitted). The Supreme Court has consistently upheld “Congress’ ability to delegate power under broad standards,” *id.* at 373, that are “phrased in sweeping terms.” *Loving v. United States*, 517 U.S. 748, 771 (1996); see also *United States v. Kuehl*, 706

F.3d 917, 920 (8th Cir. 2013) (recognizing that the Supreme Court “has found broad policy statements ... sufficient to provide an intelligible principle for delegation”). The Mine Act’s delegation of authority to MSHA to “develop, promulgate, and revise as may be appropriate, improved mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines,” 30 U.S.C. 811(a), and “in promulgating mandatory standards dealing with toxic materials or harmful physical agents ... shall set standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life,” 30 U.S.C. 811(a)(6)(A), easily satisfy that standard. See, *e.g.*, *Nat’l Broad. Co. v. United States*, 319 U.S. 190, 216-217 (1943) (upholding a delegation of authority to the FCC to regulate in the “public interest”).

Moreover, “the degree of agency discretion that is acceptable varies according to the scope of the power congressionally conferred.” *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 475 (2001). MSHA’s power is narrow: it regulates only mines, not all workplaces. And it regulates mines pervasively. *Dewey*, 452 U.S. at 601-606. More discretion is therefore acceptable.

SMI asserts that allowing an agency to regulate on “proof that there is ‘*no* risk’” would present constitutional problems. SMI Br. 26. But MSHA does not regulate based on *no* risk; in regulating health hazards, MSHA must show a risk of “material impairment of health or functional capacity[.]” 30 U.S.C. 811(a)(6)(A). And here, it is not disputed that respirable crystalline silica causes serious illness and death. 89 Fed. Reg. at 28,231-28,232.

3. MSHA’s feasibility determination, and its prohibition of miner rotation and respirators as a means of compliance with the PEL, are not arbitrary.

NSSGA challenges MSHA’s determination that the PEL is feasible, and its determinations to prohibit miner rotation and use of respirators as a means of compliance with the PEL. Those arguments fail, because each of those determinations was consistent with the Mine Act, rational, and adequately explained. See *Dep’t of Commerce*, 588 U.S. at 773.

3.1. MSHA rationally determined that the 50 µg/m³ PEL is feasible with currently available engineering and administrative controls.

NSSGA and amicus curiae Essential Minerals Association (“EMA”) and Silica Safety Coalition (“SSC”) argue that the PEL is infeasible because MSHA prohibits respirators and rotation of miners. NSSGA Br. 17-18; EMA Amicus Br. 19; SSC Amicus Br. 14. MSHA rationally determined that the PEL is feasible with these restrictions in place.

A standard is feasible if it is “capable of being done.” *Friends of the Boundary Waters Wilderness v. Robertson*, 978 F.2d 1484, 1487-1488 (8th Cir. 1992) (quoting *Am. Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 508-509 (1981)). A standard is capable of being done if MSHA can demonstrate “a reasonable possibility that the typical firm will be able to develop and install engineering and work practice controls that can meet the permissible exposure limit in most of its operations.” *Kennecott*, 476 F.3d at 957 (quoting *Am. Iron & Steel Inst. v. OSHA*, 939 F.2d 975, 980 (D.C. Cir. 1991)). “The fact that a few isolated operations within an industry will not be able to comply with the standard does not undermine a showing that the standard is generally feasible.” *Ibid.* (quoting *AISI*, 939 F.2d at 980).

It is not this Court’s duty to “sit in judgment of ... whether the proposed rule is ‘feasible’ under the statute”; this Court “ask[s] only whether *MSHA*’s conclusions on these matters pass muster under the APA.” *Coal Dust*, 812 F.3d at 866. And MSHA’s obligation to demonstrate that a standard is feasible “cannot be wielded as counterweight to MSHA’s overarching role to protect the life and health of workers in the mining industry” because “the Mine Act evinces a clear bias in favor of miner health and safety.” *Ibid.*

MSHA's technological feasibility finding came from three sources: (1) MSHA's sampling data, (2) NIOSH publications on reducing respirable dust in mines, and (3) MSHA's more than four decades of experience inspecting every mine in the country at least twice a year, as well as providing compliance assistance. 89 Fed. Reg. at 28,276.

MSHA also "examined over 200 published reports, proceedings, case studies, analytical methods, and journal articles, in addition to inspecting more than 200 web page[s], product brochures, user manuals, service/maintenance manuals and descriptive literature for dust control products, mining equipment, and related services." 89 Fed. Reg. at 28,276 n.31. Numerous commenters supported MSHA's preliminary finding in the proposed rule that the rule is feasible, recognizing that effective engineering controls are widely available and provide "reliable and consistent protection to all miners who would otherwise be exposed to respirable dust." *Id.* at 28,288.

MSHA determined that mine operators can comply with the 50 $\mu\text{g}/\text{m}^3$ PEL using engineering controls that already exist and effectively control dust. 89 Fed. Reg. at 28,275. MSHA determined that not all mines must install new engineering controls to meet the PEL; many mines already have

sufficient controls in place or can maintain or repair their existing controls to come into compliance. See *id.* at 28,283 (“MSHA has observed that when engineering controls are properly maintained, exposure levels decrease or stay low.”). For example, “[m]etal mines, which typically have substantial controls already installed, primarily need reliable preventive maintenance programs to achieve the PEL.” *Ibid.* MSHA also determined that allowable administrative controls “can further reduce and maintain exposures at or below the final rule’s PEL.” *Id.* at 28,275. MSHA made a rational choice in setting the PEL, deciding not to reduce the PEL even further, since it found that, while technically feasible, setting the PEL at 25 µg/m³ could pose a practical challenge for many mines at this time. *Id.* at 28,288, 28,314.

NSSGA argues that “[m]ine operators simply cannot use the available engineering controls to manage silica concentrations in a variety of important portions of typical mining operations.” NSSGA Br. 42; see also EMA Amicus Br. 22 (“MSHA has not provided a path to compliance with the exposure limit if [engineering and administrative controls] are not adequate to attain the exposure limit.”). But MSHA is not required to provide compliance solutions for all mines under all circumstances: “the fact that some of the specific control technologies identified by MSHA cannot be

used in every mine does not undermine the overall reasonableness of the agency's feasibility determinations," *Kennecott*, 476 F.3d at 958, because an agency is not required to provide "detailed solutions to every engineering problem." *Nat'l Petrochemical & Refiners Ass'n v. EPA*, 287 F.3d 1130, 1136 (D.C. Cir. 2002). "Nothing in the Mine Act or the APA requires an agency to describe in detail how every single regulated party will be able to comply with the agency's rules." *Kennecott*, 476 F.3d at 958.

Regardless, MSHA reasonably determined that available controls can be used to meet the PEL. MSHA acknowledged that a combination of different engineering controls may be required for certain operations and gave operators broad discretion to choose the appropriate mix of engineering and administrative controls for their mines. 89 Fed. Reg. at 28,283; see, *e.g.*, *Kennecott*, 476 F.3d at 958 (finding MSHA acted reasonably where MSHA "concluded that many different technologies can be effective in reducing DPM exposure, and it is up to each individual mine operator to choose the best mix of controls for that particular mine"). Moreover, if operators have difficulties using available controls to meet the PEL, "MSHA will provide compliance assistance to the mining community" which will include

“guidance to assist mine operators in developing and implementing appropriate controls.” 89 Fed. Reg. at 28,307.

Amici SSC and EMA argue that the final rule abandons the hierarchy of controls by prohibiting rotation of miners and respirators for compliance, and that MSHA failed to address mine operators’ longtime “reliance” on the hierarchy of controls. SSC Amicus Br. 13-15; EMA Amicus Br. 22. But the rule is consistent with the hierarchy of controls, which ranks engineering controls above administrative controls, and administrative controls above personal protective equipment for protection against workplace hazards. 89 Fed. Reg. at 28,321. And the rule allows operators to use *all* engineering controls—like ventilation systems, dust suppression devices like water sprays, and enclosed cabs—and *all* administrative controls, other than miner rotation, such as housekeeping procedures, keeping clothing clean from dust, and training miners to stand upwind while performing dust-generating tasks. *Id.* at 28,317.

NSSGA takes issue with the sampling data that MSHA used to support its feasibility determination. NSSGA Br. 38. The data show respirable crystalline silica exposure concentrations in the MNM and coal industries over several years, with the MNM data broken out by commodity (metal,

nonmetal, stone, crushed limestone, and sand and gravel). 89 Fed. Reg. at 28,276-28,281. Based on this data, MSHA determined that “operators at most mines are already achieving exposure levels less than 25 $\mu\text{g}/\text{m}^3$ [the action level] for most miners.” *Id.* at 28,288.

NSSGA argues that MSHA’s feasibility determination is arbitrary because MSHA’s sampling data did not show that *all* miners at *all* mines are already exposed to silica concentrations below the new 50 $\mu\text{g}/\text{m}^3$ PEL. NSSGA Br. 38-41. NSSGA’s argument is illogical, because if all mines were already in compliance with the PEL, there would be no need for the rule.

It is also contrary to the plain meaning of “capable of being done.” If MSHA must prove that all mines were already in compliance before a standard were considered “feasible,” there would be no point in determining whether the mining industry is “capable of” complying with the standard. MSHA acknowledged that not all mines are currently in compliance with the PEL and found that, for those mines, “operators are able to reduce exposures to at or below the PEL by properly maintaining existing engineering controls and/or by implementing new engineering and administrative controls that are currently available”—in other words, the operators are “capable of” meeting the PEL, and thus the PEL is feasible. 89 Fed. Reg. at 28,276.

NSSGA also argues that the fact that some silica samples taken at mines were above the PEL “belie[s] any claim that mine operators can successfully reduce air concentrations below that level.” NSSGA Br. 40 (noting, for example, that 27% of samples taken at metal mines were above the PEL). But not all mines are currently using all feasible engineering and administrative controls or properly maintaining their controls. See 89 Fed. Reg. at 28,281 (discussing existing dust controls in mines). Those operators are “capable of” meeting the PEL by repairing or better maintaining existing controls or implementing additional controls.

NSSGA also argues that MSHA’s sampling data do not give a full view of the industry’s current compliance with the action level and PEL. NSSGA asserts that “[t]he 27% of exceedances at metal mines ... does not mean that 27% of metal mines are failing to achieve the PEL at all; rather, it means that across metal mines, 27% of *miners* sampled faced airborne concentrations above the PEL,” NSSGA Br. 39, and concludes that “MSHA presented no evidence that any mine is currently achieving the PEL.” *Id.* at 37. But MSHA’s data establish that compliance with the PEL is feasible for mine operators; it did not need to prove that all miners at any one mine were exposed under the PEL.

NSSGA argues that MSHA’s silica exposure data were skewed by the inclusion of mines with little or no silica present in the commodity, such as limestone. NSSGA Br. 38-39. But even commodities with low silica content expose miners to high levels of silica during the extraction and milling of silica-rich rock that surrounds the mineral deposits. See, *e.g.*, *Nelson Quarries*, 30 FMSHRC 254, 302 (2008) (ALJ) (upholding citation for silica overexposure at limestone quarry). This includes dredging operations. See NSSGA Br. 38 (arguing that dredging operations “create virtually no risk of exposure to respirable silica”). For example, while sand—which contains high amounts of silica, see 89 Fed. Reg. at 28,225—is wet when it is extracted from a water source, silica-containing dust can become airborne when the sand is dried, processed, and bagged. See, *e.g.*, *Arkholia Sand & Gravel, Inc.*, 17 FMSHRC 593, 594 (1995) (ALJ) (explaining that sand at a dredging operation was dried several times before further processing).

MSHA also accounted for outliers in its silica data. MSHA included not only the average (or “mean”) silica concentrations for the samples included in its dataset, but also the median silica concentrations. See 89 Fed. Reg. at 28,278, Table VII-1. When looking at a wide range of values, the median is more instructive than the average because, as NSSGA notes, the average can

be skewed by outliers—samples with unusually low or high concentrations of silica. Across all commodity categories, the median silica concentration was far lower than the average silica concentration, and well below the PEL; in fact, all median silica concentrations were at or below the action level. *Id.* at 28,278, Table VII-1. For example, while the average silica concentration at sand and gravel mines was 38.7 $\mu\text{g}/\text{m}^3$, the median silica concentration was only 20 $\mu\text{g}/\text{m}^3$. See NSSGA Br. 38; 89 Fed. Reg. at 28,278, Table VII-1.

Using the data just on metal mines as an example, NSSGA argues that, because 48.4 percent of MSHA’s samples at metal mines were above the action level, that same percentage of metal mine operators cannot comply with the standard. NSSGA Br. 38. But the action level is half the PEL, 30 C.F.R. 60.2, 60.10, and mines that are at or below the PEL are in compliance with the PEL. See 30 C.F.R. 60.11. Almost 73 percent of metal mine samples were at or below the 50 $\mu\text{g}/\text{m}^3$ PEL; moreover, 82.3 percent of *all* MNM mine samples were at or below the 50 $\mu\text{g}/\text{m}^3$ PEL. 89 Fed. Reg. at 28,279, Table VII-2. The fact that most miners at most MNM mines are already in compliance with the final rule supports MSHA’s feasibility determination. See *Kennecott*, 476 F.3d at 959 (finding that “[i]t is not arbitrary or capricious

to consider feasible an” exposure limit “with which half of all sampled mines are already in compliance”).

Similarly, NSSGA argues that MSHA arbitrarily aggregated its sampling data across mining operations instead of aggregating according to particular tasks, which it claims undercuts MSHA’s data showing that most mines are already in compliance with the PEL. NSSGA Br. 42-43. But MSHA’s sampling data is representative of all miners because all occupational categories were represented in the data. 89 Fed. Reg. at 28,442. For example, MSHA’s data included all but one of the 121 job codes for MNM mines, grouped into 14 occupational categories. *Id.* at 28,443. MSHA explained that “[s]imilar tasks were grouped together because the work activities and respirable crystalline silica exposures were anticipated to be comparable.” *Ibid.* That is, MSHA collected data that reflect the realities of mining.

NSSGA also argues that MSHA’s data are unreliable because they are based on samples collected while use of respirators was permitted. NSSGA Br. 40. But as NSSGA admits, “[s]ampling measurements are taken outside a miner’s respirator,” *id.* at 40 n.6, so whether sampled miners were wearing respirators has no bearing on MSHA’s sampling data.

NSSGA argues that MSHA must allow use of respirators to render the silica standard feasible because “MSHA previously relied on the permissibility of respirators as one reason its [DPM] standard was feasible.” NSSGA Br. 34 (citing *Kennecott*, 476 F.3d at 959). First, the DPM rule was found feasible for reasons other than respirators, including that MSHA gave operators years to comply and highlighted its enforcement experience that many operators were already in compliance. *Kennecott*, 476 F.3d at 959; 71 Fed. Reg. at 28,959-28,961. MSHA has provided similar flexibility and identified similar levels of compliance in this rule, so like DPM’s feasibility, this rule’s feasibility does not depend on respirators.

Second, MSHA allowed respirators as a means of compliance (only if administrative and engineering controls could not reduce DPM below the PEL) in the DPM rule because MSHA acknowledged that controlling DPM exclusively with engineering and administrative controls may not have been technologically feasible. 71 Fed. Reg. 28,935-28,937. In contrast, MSHA determined that controlling silica with engineering and administrative controls is feasible. 89 Fed. Reg. at 28,287 (silica controls “exist already and are not technology-forcing”), 28,294 (“the PEL is feasible for all mines”).

NSSGA also claims that MSHA’s sampling data includes MNM miners who were rotated, so MSHA should have allowed miner rotation in its feasibility determination. NSSGA Br. 22. But miners should not have been rotated for purposes of compliance with the prior silica PEL in the first place. And even if MSHA’s data included some miners who were rotated for other purposes, MSHA’s feasibility determination did not depend on job rotation.

NSSGA also asserts that MSHA “admitted” that administrative controls beyond any engineering control “are necessary for compliance to be feasible[.]” NSSGA Br. 22. But MSHA merely pointed out that it did not restrict administrative controls other than miner rotation. 89 Fed. Reg. at 28,320 (“[MSHA] has determined it more protective of miner safety and health to limit the number of miners exposed to respirable crystalline silica and require engineering controls, supplemented by administrative controls, excluding rotation of miners.”). To provide operators with flexibility, MSHA allows other administrative controls, such as training miners about proper work positions and practices, performing housekeeping measures that control dust, and taking steps to prevent or minimize silica dust contamination of miners’ clothing. *Id.* at 28,283. Allowing these measures contributes to the rule’s feasibility.

3.2. MSHA’s decision to prohibit rotation of miners as a compliance method is rational and adequately explained.

First, MSHA explained that allowing rotation “does not address the root cause of the hazard,” 89 Fed. Reg. at 28,319—that is, it does not reduce the level of silica to which miners are exposed. NSSGA calls this explanation “irrational” because that logic applies to all hazards, and MSHA allows rotation as a means of compliance with standards regulating other hazards. NSSGA Br. 24-25. But as MSHA explained, it prohibits rotation as a means of compliance with standards regulating other health hazards. 89 Fed. Reg. at 28,319 (highlighting “MSHA’s June 6, 2005, diesel particulate matter (DPM) final rule (70 FR 3286[8]) and its 2014 Coal Dust Rule (79 FR 2481[4])”); see 71 Fed. Reg. 28,926; 30 CFR 57.5060(e). MSHA did not arbitrarily “treat[] similar situations differently,” NSSGA Br. at 25; indeed, the hazards posed by coal dust and carcinogenic diesel particulate matter are similar to those posed by carcinogenic silica dust.

And it was rational for MSHA to prioritize reducing the environmental levels of silica dust, as silica dust that is not present cannot be a source of exposure. See 89 Fed. Reg. at 28,320 (“[O]ccupational exposures to carcinogens should be reduced as much as possible through the hierarchy of controls, most importantly, the elimination or substitution of other chemicals

that are known to be less hazardous and engineering controls.”), 28,223 (“These requirements to use feasible engineering controls, supplemented by administrative controls, are consistent with widely accepted industrial hygiene principles and NIOSH’s recommendations (NIOSH, 1974). Engineering controls designed to remove or reduce the hazard at the source are the most effective.”).

Second, MSHA explained that rotation “requires continuous attention and actions on the part of miners and management[.]” 89 Fed. Reg. at 28,319. This, too, was consistent with the approach MSHA has taken when regulating similar hazards posed by coal dust and carcinogenic diesel particulate matter. And while NSSGA correctly observes that MSHA highlighted these weaknesses inherent to all administrative controls, *id.* at 28,283, MSHA was free to allow some administrative controls while prohibiting others.

It was not arbitrary for MSHA to provide operators with the flexibility of other administrative controls, such as training miners about proper work positions and practices, performing housekeeping measures like keeping workplaces clean, and taking steps to prevent or minimize contamination of miners’ clothing. 89 Fed. Reg. at 28,283. Unlike miner rotation, these

administrative controls do not simply spread risk to more miners; they reduce all miners' exposure to harmful silica dust.

Third, MSHA explained that “[t]he intent of this final rule is to provide health protection to as many miners as possible” from silica dust, 89 Fed. Reg. at 28,319, and noted that there is no safe level of occupational exposure to carcinogens like silica dust. *Id.* at 28,265 (discussing NIOSH’s determination that “there is no known safe level of exposure” for “occupational carcinogens”); App. ___, Health Effects 272 (same). Given that, it was not arbitrary for MSHA to prioritize exposing fewer miners to silica dust.

NSSGA argues that MSHA’s focus on reducing the number of miners exposed to silica is arbitrary “because MSHA found the risks arise from cumulative exposure—*i.e.*, what matters is not just the concentration of silica, but the amount of time spent in a given concentration.” NSSGA Br. 27. This misstates MSHA’s findings. MSHA did find that cumulative exposure to silica is a major risk. See, *e.g.*, 89 Fed. Reg. at 28,257-28,269, 28,316 (“[C]umulative exposure to respirable crystalline silica is well established as an important risk factor in the development of silica-related disease.”). But MSHA did *not* find that the risk is cumulative exposure “in a

given concentration.” NSSGA Br. 27. Instead, MSHA found that “there is no known safe level of exposure” for “occupational carcinogens.” 89 Fed. Reg. at 28,265. Given that finding, it was not arbitrary for MSHA to prioritize exposing fewer miners to the hazard at all.

NSSGA argues, as it did in its comment, that there is a threshold level of exposure below which exposure could not result in silicosis. NSSGA Br. 28; App. ___, MSHA-2023-0001-1448, pp.4-5. It reasons that because rotation might keep miners’ exposure below that threshold level, miners would not be vulnerable to disease.

MSHA disagreed based on the evidence. 89 Fed. Reg. at 28,319-28,320 (“rotation of workers may reduce overall average exposure for the workday but it provides periods of high short-term exposure for a larger number of workers,” and “short-term peak exposures may represent a greater risk than would be calculated based on their contribution to average exposure”), 28,320 (citing NIOSH’s recommendation that “occupational exposures to carcinogens should be reduced as much as possible through the hierarchy of controls, most importantly, the elimination” of carcinogens).

It was not arbitrary for MSHA to regulate consistent with this evidence, including from NIOSH—the Nation’s preeminent occupational health and

safety research institution. Nor was it arbitrary for MSHA to take a miner-protective approach if there is conflicting evidence before the agency. See, *e.g.*, *Benzene*, 448 U.S. at 656 (“[S]o long as [agency findings] are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting the data ... risking error on the side of overprotection rather than underprotection.”).

NSSGA also argues that MSHA cannot prohibit rotation because section 101(a)(7) of the Mine Act requires rotation. NSSGA Br. 28 (quoting 30 U.S.C. 811(a)(7)). That section says, “Where appropriate, the mandatory standard shall provide that where a determination is made that a miner may suffer material impairment of health or functional capacity by reason of exposure to the hazard covered by such mandatory standard, that miner shall be removed from such exposure and reassigned.” 30 U.S.C. 811(a)(7). But this section is about permanently reassigning particular miners vulnerable to disease, such as MSHA has provided for in 30 CFR Part 90 (reassigning coal miners showing evidence of pneumoconiosis). See 45 Fed. Reg. 80,760, 80,767 (Dec. 5, 1980) (discussing Part 90). It has nothing to do with rotation of miners. This provision authorizes the removal of a miner from exposure to a hazard but does not discuss exposing more miners to it. See 30

U.S.C. 811(a)(7). Moreover (although NSSGA omits this part of the statutory language), the statute allows MSHA to require reassignment “[w]here appropriate[.]” *Ibid.*; see *Kennecott*, 476 F.3d at 960 (“The Mine Act expressly permits MSHA to require medical evaluations and transfers ‘where appropriate.’”). MSHA rationally determined that rotation (which is different than a transfer in any event) is not “appropriate” for silica.

NSSGA also argues that prohibiting rotation would affect its members’ operations during “(1) tasks that ‘are not performed often enough’ for engineering controls; or (2) in environments (such as confined spaces) that do not permit engineering controls,” and that MSHA ignored its information on this topic. NSSGA Br. 29-30. MSHA considered those comments but concluded they did not provide specific data. 89 Fed. Reg. at 28,319. That conclusion was not arbitrary; NSSGA’s brief identifies only general examples of situations when engineering controls may not be feasible, and no data about how often those situations arise. NSSGA Br. 29. In any event, operators must require miners to wear respirators as a temporary and limited exception to the general requirements of engineering and permitted administrative controls, if “necessary by the nature of the work involved[.]” 30 C.F.R. 60.14(a)(2); 89 Fed. Reg. at 28,335-28,336.

Finally, NSSGA argues that MSHA ignored its “experience with job rotation under the Mine Act and other health and safety laws,” because MSHA allows rotation in its noise and radon standards and OSHA allows rotation in its 2016 silica rule. NSSGA Br. 30; see also SSC Amicus Br. 16-17 (arguing that MSHA failed to explain why its rule differs from OSHA’s regarding rotation); EMA Amicus Br. 19-23 (same). But MSHA explained its experience with rotation: MSHA discussed existing standards that also prohibit rotation, including “MSHA’s June 6, 2005, [DPM] final rule (70 FR 3286[8]) and its 2014 Coal Dust Rule (79 FR 2481[4]),” and explained the similarities between those standards and the rule. 89 Fed. Reg. at 28,319. Indeed, the DPM rule prohibited rotation for essentially the same reasons as this rule: “[i]t is generally accepted industrial hygiene practice ... to eliminate or minimize hazards at the source ... Moreover, such a practice is generally not considered acceptable in the case of carcinogens since it merely places more workers at risk.” 66 Fed. Reg. 5706, 5751 (Jan. 19, 2001). And the standards NSSGA cites—noise and radon, NSSGA Br. 30—are different from silica in relevant respects. Noise exposure is non-carcinogenic, and miners are significantly less likely to encounter radon than silica. See 89 Fed. Reg. at 28,221 (silica is present throughout the earth’s crust and is found in

almost every mining environment). MSHA need not discuss how a new standard relates to every existing standard to satisfy arbitrary-and-capricious review, nor must it exhaustively discuss its experience under different circumstances.

MSHA also explained why its approach to this rule is in certain respects different from OSHA's approach: mining is different from general industry and exposes miners to different risks. 89 Fed. Reg. at 28,236 (“[M]ining is significantly different from other industries regulated by OSHA, for instance, in that it involves milling, grinding and removal of overburden[.]”), 28,303 (“OSHA does not regulate mining; mining presents unique risks to miners’ health because it exposes miners to hazards that are not present in operations regulated by OSHA, including hazards in overburden removal and milling[.]”), 28,306 (the “applicability” of OSHA’s approach “to mining and milling operations is limited due to the complexity, variability, and unique challenges inherent in mining and milling operations. Activities in these operations are highly variable, due to the types of ores, minerals, and materials processed.”). And in any event, “experience” is just one of many factors Congress directed MSHA to consider, and MSHA also thoroughly considered the evidence, scientific data, and “the attainment of the highest

degree of health and safety protection for the miner[.]” 30

U.S.C. 811(a)(6)(A).

Finally, NSSGA argues because MSHA allows rotation for reasons that are not related to reducing silica dust exposure, MSHA should have allowed rotation for environmental exposures above the PEL for mine operators that have other reasons to rotate miners, as opposed to those that do not. NSSGA Br. 31. But MSHA need not account for every conceivable hypothetical when regulating; it must provide a reasoned explanation for its decision, which it has done. And even if some mine operators must “install expensive engineering systems” as an alternative to rotation, NSSGA Br. 31, that does not render the rule arbitrary.

3.3. MSHA’s decision to prohibit the use of respirators as a means of compliance with the PEL is rational and adequately explained.

NSSGA argues that prohibiting the use of respirators for compliance is “inconsistent” because the final rule permits administrative controls that also do not address the source of dust generation. NSSGA Br. 32. As explained above, agencies do not have to take an all-or-nothing approach to regulation, and permitting certain (but not all) administrative controls provides operators with more flexibility.

MSHA rationally explained the prohibition. MSHA explained that “(1) without a proper fit, dust particles enter the miner’s breathing zone; (2) inconsistent or incorrect use can compromise the effectiveness of the respirator; and (3) respirators can hinder effective communication among miners.” 89 Fed. Reg. at 28,337. NSSGA complains that MSHA cited no evidence for these reasons, NSSGA Br. at 32, but MSHA did not need to cite evidence for commonsense findings like “ill-fitting respirators will allow dust inside” or “respirators make it harder to communicate.” See *Aviators for Safe & Fairer Regul., Inc. v. F.A.A.*, 221 F.3d 222, 229 (1st Cir. 2000) (accepting the FAA’s “commonsense explanation” that well-rested flight crews are safer flight crews and noting that “neither administrators nor judges are expected to ignore the known realities of human existence”). And the evidence supports MSHA’s findings. At a public hearing on the proposed rule, one miner testified, “When you are in 40 inches of coal, and you are hunched over, the masks don’t work too well. The heat, the sweat, makes it almost impossible to breath[e].” App. ___, MSHA-2023-0001-1364, pp.66-67. Another testified, “When you’re on a belt line or in the return and it’s hot and sweaty and you’re trying to tell your buddy to pull slack, it’s hard to communicate. I’ve pulled [the respirator] off multiple times.” *Id.* at 85. A

doctor from a black lung clinic testified, “Any miner will tell you that continuously wearing a respirator in a hot, loud, confined space while sweating through an eight-hour or longer shift of intense manual labor is difficult at best. Preventing explosions and walls from falling in requires constant communication in a way that’s difficult when everyone’s wearing a respirator like this.” App. ___, MSHA-2023-0001-1353, p.67. Even if MSHA did not explicitly cite this evidence, it relied on it, and courts will “uphold a decision of less than ideal clarity if the agency’s path may reasonably be discerned.” *State Farm*, 463 U.S. at 43 (quoting *Bowman Transp., Inc. v. Ark.-Best Freight*, 419 U.S. 281, 286 (1974)).

NSSGA also argues that given MSHA’s conclusion that respirators are ineffective, it was arbitrary to require operators to use respirators temporarily in certain circumstances but prohibit them as a means of compliance. NSSGA Br. 32 (quoting 89 Fed. Reg. at 28,337). But the section of the preamble that NSSGA cites explains why respirators cannot be used *as a method of compliance*. 89 Fed. Reg. at 28,337. MSHA did not find that respirators are ineffective in every circumstance; it found that respirators cannot be used as a means of compliance because they are *less* effective than engineering controls and administrative controls, and that respirators’

effectiveness depends on several factors, many of which are prone to human error. *Id.* at 28,321 (explaining that “respirators are not as reliable as engineering controls” due to a “number of factors,” including “individual performance in donning, wearing, and doffing the respirator”). MSHA requires respirators to be used only temporarily and when necessary because it believes respirators are better than nothing in protecting miners in those limited circumstances.

NSSGA argues that it was arbitrary for MSHA to rely on Mine Act section 202(h) to prohibit respirators as a means of compliance for MNM mines, since it applies only to coal mines. NSSGA Br. 33-35; see 30 U.S.C. 842(h) (in coal mines, “[u]se of respirators shall not be substituted for environmental control measures in the active workings.”). MSHA referenced section 202(h) as general support for its prohibition on the use of respirators for compliance with the PEL. 89 Fed. Reg. at 28,334. But Congress said nothing about MNM mines and certainly did not preclude MSHA from taking that approach in the future.

In fact, Section 202(h) is an “interim” mandatory health standard, which Congress intended the Secretary to improve upon in subsequent standards. 30 U.S.C. 841(a). When Congress passed the Mine Act, it was disturbed that

protections for MNM miners lagged behind those for coal miners, noting that “metal and nonmetal mining has traditionally, though inaccurately, been considered less hazardous than coal mining.” House Report 3, 3-5. The rule thus reflects Congress’s concern for parity between MNM and coal miners because it prohibits respirators as a primary method of compliance for both coal and MNM miners, improving upon Section 202(h)’s interim standard.

NSSGA argues that MSHA arbitrarily ignored its experience with respirators and “has routinely allowed broad use of respirators for compliance with exposure limits.” NSSGA 35-37. For example, it argues that MSHA’s DPM rule allows respirators to be used for compliance with the PEL. NSSGA Br. 35 (quoting 70 Fed. Reg. 32,868, 32,955-32,956 (June 6, 2005)). But, as discussed, NSSGA’s comparison to DPM elides a critical difference between the two standards. In the DPM rule, MSHA recognized that, even with an extended time for compliance, it may not have been technologically feasible for all operators to reduce DPM to the PEL with engineering and administrative controls. 70 Fed. Reg. 32,955; 71 Fed. Reg. 28935-28,937. Accordingly, the DPM rule requires miners to wear respirators *only* if those controls are infeasible or, once implemented, do not reduce a

miner's exposure to the DPM limit to the PEL. 30 C.F.R. 57.5060(d). These feasibility concerns are not present in the silica rule. See pp.47-48, *supra*.

And the silica rule is consistent with MSHA's approach to respirators for other airborne contaminants. Under MSHA's airborne-contaminants standards for MNM mines, "Control of employee exposure to harmful airborne contaminants shall be, insofar as feasible, by prevention of contamination, removal by exhaust ventilation, or by dilution with uncontaminated air. However, where accepted, engineering control measures have not been developed or when necessary by the nature of work involved ... employees may work for reasonable periods of time in concentrations of airborne contaminants exceeding permissible levels if they are protected by appropriate respiratory protective equipment." 30 C.F.R. 56.5005(a), 57.5005(a).

This is substantively identical to Section 60.14(a) of the rule, which requires respirators when MNM miners must work in silica concentrations above the PEL while "[e]ngineering control measures are being developed and implemented" or when "[i]t is necessary by the nature of work involved (for example, occasional entry into hazardous atmospheres to perform maintenance or investigation)." 30 C.F.R. 60.14(a); see also 89 Fed. Reg. at

28,336 (regarding respirators, “[t]he final rule thus does not make any substantive changes from the existing standard in MNM”).

NSSGA also argues that MSHA was arbitrary in not allowing respirators for compliance, while OSHA’s silica rule does. NSSGA Br. 37; see also SSC Amicus Br. 17 (arguing that MSHA failed to explain why its rule differs from OSHA’s regarding respirators). MSHA need not be consistent with OSHA, nor must it explain why it takes a different approach. MSHA must rationally explain why it prohibited respirators, which it did. And in any event, MSHA’s statutory obligation is to protect the health and safety of miners, and miners face unique hazards that workers at OSHA-regulated workplaces do not face. See pp.65, *supra* (citing 89 Fed. Reg. at 28,236, 28,303, 28,306).

NSSGA urges MSHA to take the same approach as OSHA. NSSGA Br. 37. But MSHA addressed NSSGA and other comments that the rule should allow respirators as a means of compliance and declined to adopt that approach, noting that other commenters supported the rule’s restrictions on respirator use. 89 Fed. Reg. at 28,320-21. These commenters noted that miners’ facial hair can interfere with the use of respirators, that respirator effectiveness depends on many variables, and that respirators can impede miners’ communication abilities. *Id.* at 28,321; see also, *e.g.*, ___, App. ___,

MSHA-2023-0001-1351, p.2 (“AIHA does not believe respirators are a solution for possible silica dust inhalation control.”); App. ___, MSHA-2023-0001-1418, p.3 (“Miners should not be forced to work when silica levels are known to be above safe levels—even if they have respirators, which are difficult to wear for extended periods and interfere with communication.”); App. ___, MSHA-2023-0001-1421, p.7 (“[M]any mine operators and miners may lack the resources needed to ensure proper use of [respirators] and may therefore use the equipment inappropriately—thus creating a false sense of exposure protection from silica dust.”).

4. MSHA’s decision not to impose a “one size fits all” error factor on mine operator samples was rational and adequately explained.

NSSGA asserts that MSHA acted arbitrarily by failing to account for the fact that measuring and analyzing silica exposure results in statistical uncertainty. NSSGA Br. 44-48. This is incorrect. MSHA engaged with comments urging it to apply a fixed error factor to the PEL and action level. 89 Fed. Reg. at 28,317. MSHA, however, decided not to mandate a *specific* error factor in the final rule for operators, and for good reason: the rule allows operators to use different samplers and laboratories, which will result in different and as-yet-unknown error factors. *Ibid.*

Concerned about the availability of sampling equipment, Petitioners AEMA and NMA urged MSHA to permit operators to use any ISO-compliant sampler. App. ___, MSHA-2023-0001-1424, p.15; App. ___, MSHA-2023-0001-1428, 18. MSHA agreed; the rule provides mine operators with flexibility, requiring only that they use any sampler that conforms to the ISO standard. 30 C.F.R. 60.12(e)(4). Because the rule allows operators to use any ISO-compliant sampler and any ISO-compliant laboratory, inevitably some variation in possible measurement error will exist. 89 Fed. Reg. at 28,317. In other words, there is no “one size fits all” error factor that can be applied to all samplers and all laboratories. Accordingly, MSHA rationally did not mandate that a specific error factor be used.

NSSGA also argues that it was arbitrary for MSHA not to use an error factor in the rule since in its 2014 Coal Dust Rule, MSHA included specific excessive concentration values (ECVs), similar to an error factor. NSSGA Br. 45-46; see 30 C.F.R. Part 70, Table 70-1; Part 71, Table 71-1. MSHA included ECVs in the Coal Dust Rule for samples taken with a CPDM. Unlike the Silica Rule, the Coal Dust Rule requires coal operators to use two specific samplers: the continuous personal dust monitor (CPDM) and the coal mine dust personal sampler unit (CMDPSU). 30 C.F.R. 70.201, 71.201. Unlike the

samplers operators may use under the silica rule, MSHA knows the statistical uncertainties associated with each of these two samplers. Unlike the silica rule, which allows operators to use any accredited lab, all CPDM and CMDPSU samples are processed by the MSHA Laboratory. 30 C.F.R. 70.210; 71.207. And unlike the final rule, which permits analysis of silica samples using any method specified by MSHA, NIOSH, or OSHA, 30 C.F.R. 60.12(f)(2), all coal dust samples are analyzed using MSHA's P-7 IR method. 79 Fed. Reg. 24,814, 24,879 (May 1, 2014). Given these differences, it was not arbitrary for MSHA to take a different approach than it did in the Coal Dust Rule.

NSSGA also implies that it will be subject to unfair enforcement if the rule contains no error factor. NSSGA Br. 45. It will not. An operator has the right to contest a citation before the Federal Mine Safety and Health Review Commission, 30 U.S.C. 815(a), and “[t]he Mine Act imposes on the Secretary the burden of proving an alleged violation by a preponderance of the evidence.” *Sims Crane*, 41 FMSHRC 393, 396 (2019). That is true also for health violations. See, *e.g.*, *Union Oil Co. of Calif.*, 9 FMSHRC 282, 294 (1987) (ALJ) (affirming a citation because “the Secretary has established by a preponderance of the reliable and probative evidence that a miner was

exposed to a level of airborne contaminant in excess of the” limit for vanadium), *aff’d*, 11 FMSHRC 289 (1989).

MSHA inspectors sample for respirable dust using a cyclone sampler called the “Dorr-Oliver 10 mm nylon.” 88 Fed. Reg. at 44,862. MSHA then sends its samples to the MSHA Laboratory for analysis. 89 Fed. Reg. at 28,224. MSHA uses XRD for MNM mine samples and IR for coal mine samples. *Ibid.* MSHA uses a 21% error factor that takes into account both the sampling and analysis methods. App. ___, MSHA-2023-0001-0106, p.6. If operators seek direct comparison to MSHA sampling results in taking their own samples, they may use the 10 mm nylon Dorr-Oliver cyclone sampler.

The Tenth Circuit affirmed a similar approach MSHA took in a 1980 standard regulating coal dust levels and requiring sampling. *Am. Min. Cong. v. Marshall*, 671 F.2d 1251, 1258-1259 (10th Cir. 1982). In that rule, MSHA limited dust levels to 2 mg/m³ and did not include a provision accounting for variability in sampling. *Id.* at 1259. Mining associations challenged the provision, arguing that it arbitrarily allowed MSHA to cite an operator even for samples over that limit but “within the bounds of probable measurement error.” *Ibid.* The Tenth Circuit rejected that challenge, reasoning that “Congress has not mandated any accounting for variability and has given the

Secretary broad discretion in enforcing the respirable dust standard.” *Ibid.* It noted “that on occasion a mine operator will be cited for violating the standard when the actual concentration of dust is below” the limit, but “there will be just as many occasions on which the operator is not cited when actual dust concentrations are above” the limit. *Id.* at 1260. It reasoned that “[t]he Secretary has considered the relevant factors in adopting a sampling program under which the risk of error is shared equally by mine operators and miners,” *ibid.*, and that “resolv[ing] the remaining variability solely in favor of mine operators [would be] to the detriment of the congressional purpose to protect miners from black lung disease ... The Secretary has not abused his discretion by refusing to put the risk of the remaining error on miners.” *Id.* at 1259.

MSHA acted well within the “zone of reasonableness,” *Biden*, 595 U.S. at 96 (quotation omitted), when it decided not to mandate a specific error factor for operator samplers, especially considering the inevitable but not-yet-known variation inherent in using different samplers and laboratories.

5. MSHA’s decision not to allow “objective data” to confirm initial sampling was rational and adequately explained.

NSSGA argues that MSHA arbitrarily removed the proposed option for operators to discontinue sampling after taking one sample below the action

level, if they confirmed with “objective data” that exposures were below that level. NSSGA Br. 49. But MSHA’s decision was rationally based on numerous comments suggesting that “objective data is not an accurate or reliable measure of exposure to respirable crystalline silica and that objective data should not be used to exempt operators from sampling.” 89 Fed. Reg. at 28,313.

For example, the National Coalition of Black Lung and Respiratory Disease Clinics highlighted the discrepancies between “objective data” and actual exposure and explained that the difference matters because “workers may unknowingly be exposed to higher than intended RCS levels without the direct confirmation provided by the second baseline sample.” App. ___, MSHA-2023-0001-1410, p.4. The AFL-CIO commented that the proposed definition of “objective data” could result in inconsistencies in data quality and, ultimately, unrepresentative data. See App. ___, MSHA-2023-0001-1449, p.10. And Representative Robert C. “Bobby” Scott commented that the proposed rule’s use of objective data created “perverse” incentives. App. ___, MSHA-2023-0001-1439, p.20. Representative Scott was concerned that the proposal invited unscrupulous operators to commission “‘industry-wide surveys’ and ‘calculations based on the composition of a substance’ to

characterize exposure potentials in ways that happen to align with operators' desire to escape monitoring and exposure controls." *Ibid.*

After considering these comments, MSHA removed the objective data option, instead requiring mine operators to get a second sample below the action level to discontinue sampling. 89 Fed. Reg. at 28,322-28,323. MSHA decided, based on the comments and its own conclusions, that objective data are "not likely to represent mining conditions closely resembling ... the mine operator's current operations," and found that sampling is more accurate. *Id.* at 28,323.

NSSGA argues that this rationale contradicts the proposal, because the proposal required "objective data" to reflect the operator's mining methods, so that any objective data an operator relied on would necessarily reflect actual exposure. NSSGA Br. 49. NSSGA cites *Evergreen Shipping Agency Corp. v. Federal Maritime Commission*, 106 F.4th 1113 (D.C. Cir. 2024), and *GameFly, Inc. v. Postal Regulatory Commission*, 704 F.3d 145 (D.C. Cir. 2013) for the proposition that an agency acts arbitrarily if the "reasons it gave for eliminating [an option in the proposal] contradicted the terms of the proposal." NSSGA Br. 50. NSSGA's reliance on these cases is misplaced because those cases did not arise in the rulemaking context; rather, they

addressed whether the orders of administrative commissions were arbitrary because of illogical reasoning in the orders. Administrative adjudications do not involve the kind of give-and-take that notice-and-comment rulemakings do.

MSHA requested comments on whether it would be “appropriate to allow mine operators to use objective data instead of a second baseline sample.” 88 Fed. Reg. at 44,856. MSHA received comments about the shortcomings of that “objective data,” considered those comments, and ultimately decided to make a change to the rule and its supporting reasoning. It was not “illogical” for MSHA to change its mind based on the comments it received in response to its request; it was the notice-and-comment process working as designed. See *Nat’l Mining Ass’n*, 512 F.3d at 699 (“Agencies often adjust or abandon their proposals in light of public comments or internal agency reconsideration.”) (quotation omitted).

NSSGA suggests that it would not have had to conduct initial sampling at all under the proposal, NSSGA Br. 48, but that is mistaken. The proposed rule *also* required one initial sample from all mines with miners reasonably expected to be exposed to silica. 88 Fed. Reg. at 44,906. Objective data use could have been used to *confirm* initial sampling results that were below the

action level. *Ibid.* (“Proposed paragraph (a)(2) would allow mine operators to use objective data to confirm the baseline sample result.”).

NSSGA argues that “even with evidence showing no exposure risk, every mine operator must undertake an initial program of sampling ‘to assess the full shift ... exposure ... for each miner who is or may reasonably be expected to be exposed’ to silica.” NSSGA Br. 10 (quoting 30 C.F.R. 60.12(a)(1)).

Likewise, Amicus SSC argues that the rule requires mine operators to “start from scratch” with sampling by eliminating the option to use objective data.

SSC Amicus Br. 15. But nothing in the final rule prohibits a mine operator from using objective data to inform its determination about which miners are exposed to or “may reasonably be expected to be” exposed to respirable crystalline silica and subject to sampling in the first place. 30 C.F.R.

60.12(a)(1). If a mine operator reasonably believes that miners are not exposed to silica and has “no exposure risk,” NSSGA Br. 10, the operator does not have to sample them. *Ibid.*

6. The rule’s medical surveillance requirements are consistent with the Mine Act and rationally explained.

6.1. MSHA has statutory authority to promulgate the rule’s medical-examination requirements.

The Mine Act requires that mandatory standards promulgated by the Secretary “shall prescribe the type and frequency of medical examinations or other tests which shall be made available, by the operator at his cost, to miners exposed to such hazards in order to most effectively determine whether the health of such miners is adversely affected by such exposure.”

30 U.S.C. 811(a)(7). NSSGA argues that the Mine Act prohibits MSHA from requiring operators to offer medical examinations to all miners because not all miners are “exposed to” silica. NSSGA Br. 51-53; see also EMA Amicus Br. 16-17 (arguing that the medical surveillance scheme should be tied to exposure risk); SSC Amicus Br. 20 (same). In other words, it argues that MSHA may regulate only if it first determines that each individual miner has personally encountered the hazard it intends to regulate. That is inconsistent with the statutory text and purpose, and it would be nonsensical.

Because the Mine Act does not define “exposed to,” this court interprets the phrase “using the normal tools of statutory interpretation.” *Esquivel-Quintana v. Sessions*, 581 U.S. 385, 391 (2017). The task of statutory

interpretation “begin[s] and end[s] ... with the text, giving each word its ordinary, contemporary, common meaning.” *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 580 U.S. 405, 414 (2017) (quotation omitted); *Sanzone v. Mercy Health*, 954 F.3d 1031, 1041 (8th Cir. 2020), as corrected (Apr. 9, 2020) (same). Determining the ordinary meaning of a statutory provision requires “reading the whole statutory text, considering the purpose and context of the statute, and consulting any precedents or authorities that inform the analysis.” *Sanzone*, 954 F.3d at 1040 (quoting *Dolan v. USPS*, 546 U.S. 481, 486 (2006)). This Court will depart from the ordinary meaning only if “context requires a different result.” *Gonzales v. Carhart*, 550 U.S. 124, 152 (2007).

This Court typically begins its “ordinary meaning inquiry with the simple dictionary definition from the time of the statute’s enactment.” *Sanzone*, 954 F.3d at 1041. Dictionaries contemporaneous with the Mine Act’s enactment in 1977 defined “exposed” as “not shielded or protected: so situated as to invite or make likely an attack, injury, or other adverse development,” *Webster’s Third New International Dictionary* 802 (1976), and “left or being without shelter or protection” and “susceptible to attack; vulnerable,” *The Random House College Dictionary* 467 (rev. ed. 1984).

Another recent dictionary provides a similar definition: “not shielded or protected.” *Merriam-Webster’s Collegiate Dictionary* 441 (11th ed. 2003).

These definitions demonstrate a consistent meaning: to be “exposed” means to be so situated as to be open to or unprotected from some hazard or adverse development, or to be vulnerable or susceptible to some hazard or adverse development.

Miners are “exposed” to the hazards of respirable silica because miners, as part of their occupation, are collectively situated to be vulnerable or susceptible to inhalation of respirable silica dust. The plain meaning of “exposed” reveals that miners do not need to have already encountered silica dust on the job to be exposed to silica dust; instead, being likely to encounter silica dust as a part of their occupation renders them “exposed” to it. Because silica is ubiquitous—present in all soils and almost every mineral on Earth, 89 Fed. Reg. at 28,221—almost all miners are in a position to encounter silica dust.

In its amicus brief, SSC argues that the medical surveillance program is too broad because it encompasses “even office and administrative staff who work in a mine but are not exposed to silica.” SSC Amicus Br. 20. But the statute defines “miner” as “*any* individual working in a coal or other

mine[.]” 30 U.S.C. 802(g) (emphasis added). That includes “[n]onproduction personnel (those not directly involved in the extraction process)[.]” *Nat’l Indus. Sand Ass’n v. Marshall*, 601 F.2d 689, 704 (3d Cir. 1979) (upholding MSHA rule requiring operators to provide hazard training even to those not involved in the extraction process); *Donovan ex rel. Anderson v. Stafford Const. Co.*, 732 F.2d 954, 955, 958 (D.C. Cir. 1984) (agreeing that a “secretary and bookkeeper” who was “not directly involved in the extraction process” was a “miner” within the statute’s definition). And in any event, administrative staff at a mine are not like other office workers; the administrative record for this rule shows that administrative workers at mines *are* exposed to dangerous respirable dusts, including silica.

In its comment, the Arizona Mining Association discussed “a mine that conducted a baseline test with a continuous dust monitor in an office setting” and found that office workers were “close to the proposed action level” for respirable crystalline silica. 89 Fed. Reg. at 28,312 (citing App. ___, MSHA-2023-0001-1368). Likewise, at one of the hearings on the rule, a miner who works as a dispatcher testified that “the rock dust bin and the fan” are located right near his office, and that the HVAC vents in his office are “black” with rock dust. App. ___, MSHA-2023-0001-1364, pp.85-86; see

also *id.* at 19 (explaining that mines often place return air entries directly next to mine offices, causing “highly dusty silica air” to circulate nearby).

This definition of “exposed” fits within the overall context of Section 101(a)(7) and the statute as a whole. See *Designworks Homes, Inc. v. Columbia House of Brokers Realty, Inc.*, 9 F.4th 803, 807 (8th Cir. 2021), *cert. denied*, 142 S. Ct. 2888 (2022) (“When interpreting a statute, we must also consider the statutory context in which the words in question appear, including both the specific context in which the language is used, and the broader context of the statute as a whole.”) (quoting *Robinson v. Shell Oil Co.*, 519 U.S. 337, 341 (1997) (cleaned up). First, in Section 203(a)—the “medical examinations” section in Title II of the Mine Act, Interim Mandatory Health Standards—Congress states that *all* coal miners working in coal mines should have the opportunity to have a chest X-ray, and specifically, miners new to the industry *must* be given X-rays:

[t]he operator of a coal mine shall ... mak[e] available *to each miner working in a coal mine the opportunity* to have a chest roentgenogram [X-ray] within eighteen months after the date of enactment of this Act, a second chest [X-ray] within three years thereafter, and subsequent chest [X-ray] at such intervals thereafter of not to exceed five years, [and that] *[e]ach worker who begins work in a coal mine for the first time shall be given*, as soon as possible after commencement of his employment, and again three years later if he is still engaged in coal mining, a chest [X-ray]; and in the event the second such chest [X-ray]

shows evidence of the development of pneumoconiosis the worker shall be given, two years later if he is still engaged in coal mining, an additional chest [X-ray].

30 U.S.C. 843(a) (emphasis added). Moreover, “exposed” modifies the term “miners,” which Congress employed throughout the statute to refer to miners in the collective. See, *e.g.*, 30 U.S.C. 801(b), (e); 815(b)(2)(C); 818(a)(2); 846; 861(b); 862(a), (f); 863(c)(1); 877(a). When Congress meant to refer to individual miners, it did so. See, *e.g.*, 30 U.S.C. 811(a)(6)(A) (“such miner”); 811(a)(7) (“such miner”); 813(g)(1) (“a miner,” “such miner”); 815(c)(1) (“any miner” and “such miner”); 902 (“a miner,” “such miner”); 938 (“such miner”).

NSSGA, however, contends that this Court should interpret “exposed” entirely from its verb tense, i.e., because “exposed” can be read as a past-tense verb, past demonstrated exposure is needed. NSSGA Br. 52. Though “Congress’ use of a verb tense is significant in construing statutes[,]” *United States v. Wilson*, 503 U.S. 329, 333 (1992), courts “do not stop with the grammar.” *Cargill v. Garland*, 57 F.4th 447, 461 (5th Cir. 2023), *aff’d*, 602 U.S. 406 (2024). “[A] court should not interpret each word in a statute with blinders on, refusing to look at the word’s function within the broader statutory context.” *Abramski v. United States*, 573 U.S. 169, 179 n.6 (2014).

And that other context demonstrates that the term does not simply operate as a past-tense verb; rather, it denotes Congress' intent that "miners exposed to" refers to miners, collectively, who are left vulnerable to, or susceptible to, an identified hazard because of their occupation.

Interpreting "exposed" as meaning "past exposure," while also reading "miners" as individual miners, as NSSGA asks, would mean that operators are not required to provide or offer medical examinations to miners until after it has been proven that each individual miner has encountered silica in the course of their work. NSSGA Br. 52.

This would produce absurd and unreasonable results. See, *e.g.*, *United States v. Pacheco*, 977 F.3d 764, 767 (9th Cir. 2020) ("plain meaning of the text controls unless it is ambiguous or leads to an absurd result"). MSHA would need to require operators to sample every miner during every shift to determine whether an operator is required to provide medical examinations. Samplings would need to occur daily, or multiple times daily if there is a change in any miner's work circumstances. Otherwise, there would be no way to know whether an operator's statutory obligation to offer or require medical examinations would begin. MSHA has not sought to impose these burdens on mine operators.

Further, this interpretation—which would lead to piecemeal medical monitoring only after fact-intensive inquiries into whether each individual miner has been exposed—would thwart MSHA’s ability to carry out Congress’ mandate of “effectively” determining the health impacts of exposure to an identified hazard. 30 U.S.C. 811(a)(7). And it would be contrary to an explicit purpose of the Mine Act, which is “to *prevent* occupational diseases originating in such mines.” 30 U.S.C. 801(c) (emphasis added).

6.2. MSHA rationally determined that the medical surveillance requirements are the most effective means to determine threats to miner health.

Congress mandated that the Secretary shall prescribe medical examinations that “most effectively” help detect adverse impacts on miner health due to exposure to hazards. 30 U.S.C. 811(a)(7). NSSGA asserts that the medical surveillance provisions are not the most effective because they prioritize medical examinations of new miners over medical examinations for experienced miners. It argues that because medical examinations are mandatory for new miners who might have yet to be exposed to silica but are voluntary for experienced miners who are more likely to have been exposed, this is not the most effective method for detecting adverse health effects.

NSSGA Br. 53. NSSGA further asserts that since medical surveillance is not conditioned upon the degree of silica exposure, the benefit is unclear. *Id.* at 54.

Congress did not define what it means for a medical examination standard to “most effectively” help miners detect adverse effects from exposure. But there is no need to determine the meaning because Congress expressly approved an X-ray testing scheme, like the one in the final rule, that prioritizes requiring miners new to the industry to receive X-rays to increase early detection, while giving existing miners the option to participate. In Section 203(a) of the Mine Act—the medical examination provision for interim mandatory standards applicable to coal mines—Congress directed that operators must give existing miners “the opportunity” to take an X-ray, with optional follow up X-rays, while directing that X-rays “shall be given” to “[e]ach worker who begins work in a coal mine for the first time,” with mandatory follow-up X-rays. 30 U.S.C. 843(a).

Consistent with Section 203(a), MSHA made an evidence- and experience-based determination that the most effective method of detecting adverse health effects in miners exposed to respirable silica is by prioritizing early detection, coupled with follow-up examinations where adverse health

effects are detected. “The purpose of medical surveillance is to provide MNM miners necessary information to determine if their health may be adversely affected by exposure to respirable crystalline silica and enable miners to take appropriate action to stop further disease progression.” 89 Fed. Reg. at 28,340.

MSHA determined that “[e]arly detection of illness often leads to early intervention and treatment, which may slow disease progression and/or improve health outcomes.” 89 Fed. Reg. at 28,356, 28,386. Thus, MSHA determined that the “initial mandatory examination that assesses a new miner’s baseline pulmonary status, coupled with periodic examinations, will assist in the early detection of respirable crystalline silica-related illnesses.” *Id.* at 28,388. This is consistent with MSHA’s longstanding view that early detection of disease is key. See 88 Fed. Reg. at 44,914; 79 Fed. Reg. at 24,928 (“Mandatory examinations provided in close proximity to when miners are first hired and first exposed to respirable coal mine dust are necessary in order to establish an accurate baseline of each miner’s health. Miners may not recognize early symptoms of pneumoconiosis or COPD and, therefore, they might not be likely to seek medical assistance.”).

Further, MSHA rationally determined that the standard is the most effective way to determine whether miners' health is affected by exposure to silica in that the rule will provide MNM miners similar monitoring as coal miners. One important purpose of the Mine Act is to provide parity in protections for coal and MNM miners. House Report 3-10. Consistent with that purpose, MSHA found that "it is important to maintain consistency between the medical surveillance requirements for MNM and coal mines to ensure all miners have the information necessary for the early detection of silica-related disease." 89 Fed. Reg. at 28,340.

EMA argues that the medical examination scheme is not the most effective to determine threats to miners' health because 30 C.F.R. 50.20—which requires operators to report "each accident, occupational injury, or occupational illness at the mine" to MSHA, 30 C.F.R. 50.20(a)—"already cover[s]" silica, and is a "less intrusive" and "already effective ... means of gathering diagnosis data." EMA Amicus Br. 18. This argument is misplaced. First, Section 50.20 requires operators to report known diagnoses, 30 C.F.R. 50.20, and is not for the purpose of "determin[ing] whether the health of such miners is adversely affected by" exposure to hazards. 30 U.S.C. 811(a)(7). Second, Section 101(a)(7) obligates MSHA to promulgate

the “most effective” medical examination scheme, not the “least intrusive” one. *Ibid.* Thus, Section 50.20 does not “already cover,” EMA Amicus Br. 18, the medical examination scheme the Secretary is authorized to promulgate under Section 101(a)(7) of the Mine Act.

6.3. MSHA rationally determined that there is sufficient availability of X-ray testing.

The rule requires that medical examinations must include chest X-rays reviewed and classified by NIOSH-certified B readers. 30 C.F.R. 60.15(a)(2)(iii). X-rays can be reviewed and classified by B readers either by having the X-ray taken and reviewed by one of the numerous NIOSH-certified B readers located across the country, or by electronically submitting a digital X-ray taken at any facility with a digital X-ray machine to remotely located B Readers anywhere in the country for interpretation. 89 Fed. Reg. at 28,297. NSSGA argues this is arbitrary because “there are not enough B readers in many of the areas where mines are located” and because “MSHA had zero support in the record for [its] assumption” that “the necessary digital X-ray imagers are available in the areas where mines are located.” NSSGA Br. 54; see also SSC Amicus Br. 21 (same).

First, MSHA addressed concerns about the limited number of B readers in remote locations by allowing digital X-rays to be taken at various locations

and submitted electronically to any B reader in the country. 89 Fed. Reg. at 28,297, 28,341.

Second, MSHA had evidence that sufficient digital X-ray equipment is available. Several commenters noted that there is sufficient digital X-ray capacity. The AFL-CIO explained that “[i]t is already common practice for NIOSH-certified B Readers to be electronically sent digital X-rays for interpretation.” App. ___, MSHA-2023-0001-1449, p.8. The National Coalition of Black Lung and Respiratory Disease Clinics underscored that “[p]ulmonary and occupational medicine providers, chest radiography, and spirometry testing are sufficiently common and widespread, including in rural communities, as to permit the proposed examinations of MNM workers,” and that “the procedures comprising the proposed medical surveillance are commonly conducted in the general population.” App. ___, MSHA-2023-0001-1410, p.3. MSHA cited this evidence “support[ing] MSHA’s assertion that the availability of digital radiography allows for the electronic transmission of chest radiographs to remotely located B Readers” in the preamble. 89 Fed. Reg. at 28,341.

Moreover, NSSGA’s own comment included proposed rule text recommending that medical examinations include “[a] chest X-ray (a single

posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) *or digital radiography systems*), *interpreted and classified* according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses *by a NIOSH-certified B Reader.*” App. ___, MSHA-2023-0001-1448, p.35 (emphasis added). NSSGA does not explain why it made this proposal if, as NSSGA now claims, NSSGA Br. 54, there is no evidence that there are sufficient X-ray imagers available.

6.4. MSHA’s decision to require miners’ X-ray classifications to be reported to NIOSH is rational and a logical outgrowth of the proposed rule.

6.4.1 MSHA thoroughly considered miners’ confidentiality and explained its decision to require the reporting of X-ray classifications to NIOSH.

NSSGA objects to the requirement that the chest X-ray classifications must be reported to NIOSH once NIOSH establishes a reporting system. NSSGA Br. 55-57. It argues that MSHA’s consideration of the public health benefit of surveillance was arbitrary because Congress never intended MSHA to consider that. *Ibid.* It also argues that miner confidentiality interests in withholding classifications from NIOSH is an “important aspect” in

promoting miner participation in the surveillance program and therefore is relevant to its effectiveness. *Id.* at 56 (citing *McClung*, 788 F.3d at 828). But MSHA considered appropriate factors and rationally explained its decision.

MSHA did not arbitrarily consider a public health benefit; Congress directed it to consider issues bearing directly on that factor. Congress said that “medical examinations are intended to be for the benefit of miners, and are for the purpose both of testing the adequacy of the standard and testing whether the miner has been subjected to material impairment of health or functional capacity as a result of exposure to the substance or hazard.” S. Rep. No. 95-181, at 22 (1977) (Senate Report). It is “for the benefit of miners” for them to know whether they have a disease *and* what the broader levels of disease are in mining, and collecting information about disease industry-wide will “test[] the adequacy of the standard.” *Ibid.* That is the “public health benefit” to which MSHA referred. 89 Fed. Reg. at 28,345.

Moreover, the data will enable NIOSH to provide information to MSHA about when regulations may be needed, and will otherwise enable MSHA to know when there is a need to regulate. See 30 U.S.C. 811(a)(1) (authorizing MSHA to regulate “upon the basis of information submitted to him in writing by [NIOSH] ... or on the basis of any information developed by the

Secretary or otherwise available to him”); *see, e.g.*, App. ___, MSHA-2023-0001-1149 p.28 (noting that “the alarming trend of progressive massive fibrosis and silicosis among young” coal miners “was identified” because “the centralized NIOSH medical surveillance program allows for systematic reporting of health conditions so they can identify aggregate trends.”).

NSSGA also argues that there is no public health benefit, because miners will not participate in the medical surveillance program due to confidentiality concerns about NIOSH obtaining their X-ray classifications. NSSGA Br. 55. It provides no evidence for that assertion, and the evidence shows the contrary: for example, the United Mine Workers of America urged MSHA to “work with NIOSH in expanding the Coal Workers Health Surveillance Program’s mobile unit to screen MNM miners as well or create a new Health Surveillance Program ... targeting MNM miners,” and noted, with approval, that “[c]urrently, the screening records for coal miners go to NIOSH.” App. ___, MSHA-2023-0001-1398, p.14. There is, however, evidence that miners may be reluctant to participate in medical surveillance if *operators* would receive their X-ray classifications. See 89 Fed. Reg. at 28,343 (noting the United Steelworkers’ comment that “MSHA should encourage participation, by reducing barriers such as ... privacy and medical

confidentiality concerns, and the fear of retaliation, job loss, loss of potential job advancement, and future employment”); see also App. ___, MSHA-2023-0001-1449, p.28 (noting concerns that mine operators may use medical examination results to retaliate against miners). And a miner testified at a public hearing that he feared mine operators would retaliate if they had access to miners’ medical records. App. ___, MSHA-2023-0001-1364, p.124-125. MSHA thoroughly considered miners’ privacy and confidentiality, and because MSHA agreed that miners may not participate in medical surveillance out of a fear of retaliation if operators receive the medical examination results, MSHA rejected Petitioners’ requests that operators should have access to miners’ examination records. 89 Fed. Reg. at 28,344 (“MSHA agrees with the commenters who expressed concerns regarding the confidentiality ... of medical examination results”).

MSHA was within its discretion under the Mine Act to determine that the most effective way to monitor and improve miners’ collective health was to encourage participation in the surveillance program and require NIOSH reporting of classifications. See, *e.g.*, *Associated Builders & Contractors of Tex., Inc. v. NLRB*, 826 F.3d 215, 226 (5th Cir. 2016) (holding that “it is within the Board’s discretion to weigh competing interests and promulgate rules

that advance the goals of the Act” and that “it is not the province of this court to inject a contrary policy preference.”).

And MSHA did not, as NSSGA asserts, strip miners of confidentiality by requiring X-Ray classifications to be sent to NIOSH. See NSSGA Br. 55.

First, MSHA referred to its experience with the coal dust rule, 88 Fed. Reg. at 44,914, and under that rule, NIOSH keeps miners’ records confidential and shares them only with miners or their legal representatives. *Black Lung Screenings*, NIOSH,

<https://www.cdc.gov/niosh/cwhsp/screenings/index.html> (last visited Jan. 17, 2025). Second, personal medical data is required to be protected from disclosure consistent with applicable federal privacy laws.

Finally, the Court should take with a grain of salt NSSGA’s newfound interest in miners’ confidentiality in the hands of NIOSH, given that it urged MSHA to provide the very same records to mine operators. See 89 Fed. Reg. at 28,344.

6.4.2 Petitioners had adequate notice that a requirement that X-ray classifications be sent to NIOSH might be included in the final rule.

NSSGA argues it had no notice the final rule might require that X-ray classifications be sent to NIOSH, because the text of the NPRM did not include the requirement. NSSGA Br. 56-57.

The rule proposed that “the results of medical examinations or tests ... shall be provided only to the miner, and at the request of the miner, to the miner’s designated physician.” 88 Fed. Reg. at 45,014. However, as discussed p.18, *supra*, MSHA sought comment regarding to whom X-ray classifications should be communicated, and whether the final rule should more closely align with 30 C.F.R. 72.100, which requires, among other things, that X-ray classifications be sent to NIOSH. *Id.* at 44,857; 30 C.F.R. 72.100(a)(2).⁵ Thus, NSSGA had adequate notice that MSHA was considering “to whom” X-ray classification results must be furnished, including NIOSH.

⁵ “The results of examinations or tests made pursuant to this section shall be furnished” to the “Secretary of Health and Human Services (HHS),” where NIOSH is housed; see also *About Coal Workers’ Health Surveillance Program*, NIOSH, <https://www.cdc.gov/niosh/cwhsp/about/index.html> (last visited Jan. 2, 2025).

NSSGA was aware of this potential because NSSGA commented that MSHA should require X-ray classification results be furnished to a party *not* mentioned in the proposed rule: operators. See pp.18-19, *supra*. Moreover, numerous other interested parties commented that MSHA should include in the final rule a requirement that X-ray results be sent to NIOSH. See p.18, *supra*. This suggests that commenters were able to discern from the language of the preamble that MSHA was considering requiring X-ray results to be furnished to other parties, such as NIOSH. And “[w]hile comments in and of themselves do not resolve the notice issue, they do suggest that various parties anticipated that the final rule might include” the additions to the final rule. *Mkt. Synergy Grp., Inc. v. U.S. Dep’t of Lab.*, 885 F.3d 676, 682 (10th Cir. 2018); *First Am. Discount Corp. v. Commodity Futures Trading Comm’n*, 222 F.3d 1008, 1015 (D.C. Cir. 2000) (“The fact that others ... did comment on and indeed propose the [contested provision] suggests that they, at least, regarded it as a logical outgrowth”).

7. MSHA rationally decided not to exclude sorptive mineral mines.

7.1. MSHA examined the best available evidence about sorptive minerals’ toxicity.

SMI argues that MSHA did not consider the “best available evidence” or “latest scientific evidence” as required by the Mine Act, including evidence

that aged, occluded silica is less toxic than freshly fractured, unoccluded silica. SMI Br. 61-66; EMA Amicus Br. 7-8. But MSHA considered those things, as well as the other factors the Mine Act requires MSHA to consider.

First, MSHA “shall set standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life.” 30 U.S.C. 811(a)(6)(A). MSHA “shall” also “consider ... the latest available scientific data in the field[.]” *Ibid.* MSHA fulfills its obligation to consider the best available and latest scientific evidence when it “acknowledge[s] the petitioners’ concern and their data, present[s] contrary evidence that supported MSHA’s position, and reache[s] a conclusion about the appropriate course based on that evidence.” *Coal Dust*, 812 F.3d at 883 (holding, on these grounds, that MSHA considered the best available evidence in its standard regarding lowering miners’ exposure to respirable coal mine dust). Further, MSHA’s “duty to use the best evidence” must be “viewed through [the] lens” of the Mine Act’s “clear bias in favor of miner health and safety,” so it “cannot be wielded as counterweight to MSHA’s

overarching role to protect the life and health of workers in the mining industry.” *Id.* at 866.

MSHA considered the best and latest scientific evidence about the health effects of exposure to respirable crystalline silica, including the respirable crystalline silica contained in sorptive minerals. SMI argues that MSHA arbitrarily ignored evidence it presented that occluded silica is less toxic than unoccluded silica. SMI Br. 41-55; EMA Amicus Br. 6-7. But MSHA repeatedly acknowledged evidence suggesting that occlusion lessens toxicity. 89 Fed. Reg. at 28,235 (discussing scientific studies and “agree[ing] that there is some evidence to suggest that occluded silica is less toxic than unoccluded silica”), 28,256 (same), 28,302 (acknowledging the “lower toxicity” of occluded silica), 28,303 (acknowledging that the occluded silica particles that bentonite workers were exposed to “may be less toxic than, say, respirable crystalline silica particles resulting from sandblasting”).

Similarly, SMI argues that MSHA ignored the “latest scientific evidence” about the mechanism behind silica’s toxicity. SMI Br. 65. But MSHA acknowledged and discussed at length recent research about how silica causes lung damage. App. ___, Health Effects 38-39 (citing, among others,

Du *et al.*, 2019; Pavan *et al.*, 2019; Upaassana *et al.*, 2019; Westberg *et al.*, 2019; and Carneiro *et al.*, 2020).

In its comment, SMI discussed a study by Creutzenberg, which found that occluded quartz created less inflammation in rats than freshly fractured silica. App. ___, MSHA-2023-0001-1446, pp.8-9. SMI argues that MSHA arbitrarily discounted the study because it relied on a single rat species but credited other studies that also relied on a single rat species. SMI Br. 58-59. But MSHA explained that the Creutzenberg study SMI cited had limited relevance for evaluating health risks to miners for several reasons. App. ___, Health Effects 50-51. MSHA explained that the researchers used a short-term exposure rather than a long-term, chronic exposure. *Id.* at 50. MSHA also explained that the study used intratracheal instillation (i.e., forcing aspiration of silica through the mouth) rather than inhalation, so it did not “reflect the particle behavior in the lungs by inhalation, including lung clearance.” *Id.* at 274. And MSHA pointed out that the researchers assessed only inflammation, not long-term disease outcomes such as silicosis or lung cancer. *Id.* at 50. MSHA reasonably explained why it afforded the study little weight. See *FCC v. Prometheus Radio Project*, 592 U.S. 414, 423 (2021) (“A

court simply ensures that the agency has ... reasonably considered the relevant issues and reasonably explained the decision.”).

SMI suggests that MSHA arbitrarily dismissed the Creutzenberg study even though OSHA gave “serious weight” to it. SMI Br. 58. OSHA found only that the study’s “implications ... for development of silicosis are unclear,” and, like MSHA, determined that the study was not suitable for risk assessment because it was a short-term, single-dose experiment. 91 Fed. Reg. 16,286, 16,380 (Mar. 25, 2016) (“OSHA Preamble”). Moreover, MSHA explained that animal studies are only helpful as *supporting* evidence for human studies. App. ___, Health Effects 36. This is because “notable species differences have been seen in terms of respirable crystalline silica clearance, with slower clearance rates in humans compared to those in rats and hamsters.” *Ibid.* MSHA rationally gave more weight to the voluminous evidence that silica—including occluded silica—is toxic to humans who breathe it. See 89 Fed. Reg. at 28,302 (“As confirmed by MSHA’s review of epidemiological and toxicological studies, [sorptive] mineral dusts are toxic and can lead to serious adverse health effects in miners such as silicosis or lung cancer.”).

SMI also argues that MSHA arbitrarily relied on or “credited” other single-species rat studies (Shoemaker *et al.*, 1995; Vallyathan *et al.*, 1995; Porter *et al.*, 2005; Castranova *et al.*, 1996). SMI Br. 58-59. But MSHA discussed those studies only because SMI discussed them in its comment. App. ___, MSHA-2023-0001-1446, p.8. It was not arbitrary for MSHA to respond to SMI’s comment. MSHA did not “credit” the Castranova study in determining that silica causes disease, SMI Br. 59; MSHA merely cited the study for historical background information about silicosis. App. ___, Health Effects 11 (“Early descriptions of dust diseases of the lung did not distinguish between TB and silicosis, and most fatal cases described in the first half of the 20th century were likely a combination of silicosis and TB (Castranova *et al.*, 1996).”). And in any event, MSHA observed that the Shoemaker, Vallyathan, and Porter studies showed that aged silica, while less toxic than freshly fractured silica, still “retained significant toxicity.” App. ___, Health Effects 48.

SMI claims that MSHA relied primarily on the Shoemaker, Vallyathan, and Porter studies to determine that sorptive minerals should be included in the rule. SMI Br. 61-62. But MSHA did not rely on these studies; it relied on hundreds of other studies showing that respirable crystalline silica is

hazardous to health, including studies showing that miners exposed to sorptive mineral dust have an increased risk of developing severe silicosis. See App. ___, Health Effects 54-55. As discussed in MSHA’s health effects literature review, dozens of longitudinal studies of workers exposed to respirable crystalline silica show that silica causes progressive, irreversible, and disabling diseases.

SMI argues that “risk analysis on other forms of silica cannot be relied on to make risk determinations about sorptive clays” because occluded crystalline silica is so different from unoccluded crystalline silica. SMI Br. 55. SMI attempts to characterize clay-occluded sorptive minerals as “a different species of quartz,” or more analogous to unregulated amorphous silica. App. ___, MSHA-2023-0001-1446, p.2. But there is no evidence in the rulemaking record that the silica in sorptive minerals is a different “species.” Sorptive minerals contain both amorphous silica *and* crystalline silica, SMI Br. 52—the same crystalline silica that has been shown to cause irreversible, progressive, and fatal health conditions like silicosis and lung cancer. 89 Fed. Reg. at 28,231-28,232. MSHA does not need to create a unique risk profile for every mineral mined in the United States to justify regulating respirable crystalline silica.

SMI also argues that MSHA arbitrarily relied on studies of industries unlike sorptive clay to “justify regulating sorptive clays.” SMI Br. 62-63. MSHA discussed three studies of workers exposed to clay-occluded silica, albeit not sorptive minerals. App. ___, Health Effects 51-53. But MSHA did not rely exclusively on these studies; MSHA discussed them as part of its overall discussion of sorptive minerals, which included several other studies of workers exposed to sorptive minerals. *Id.* at 54-55. It was not arbitrary for MSHA to include relevant, if imperfect, comparisons as part of its overall review. See *Safari Club Int’l v. Haaland*, 31 F.4th 1157, 1174 (9th Cir. 2022), *cert. denied sub nom. Alaska v. Haaland*, 143 S. Ct. 1002 (2023) (“[A]n agency has leeway where its findings must be made on the frontiers of scientific knowledge.”) (quotation omitted).

SMI also argues that MSHA arbitrarily dismissed a study of amorphous silica. SMI Br. 59 (citing Poland et al., 2023). It argues that occluded silica is analogous to amorphous silica because of the “similarities between the effects of exposure to occluded quartz and amorphous silica.” *Ibid.* SMI asserts that OSHA and MSHA excluded amorphous silica from their rulemakings “based on the absence of sufficient evidence of toxicity.” SMI Br. 44-45. But neither OSHA nor MSHA opined on the toxicity of

amorphous silica. Amorphous silica was excluded because the rules regulate crystalline silica, not amorphous silica. OSHA explained that “fused quartz and other forms of amorphous silica are not considered crystalline silica under the rule,” OSHA Preamble 16,713, and affirmed that “OSHA never intended to, and did not, include amorphous silica in the proposed rule. Nor do the final standards apply to amorphous silica.” *Id.* at 16,705. MSHA similarly stated that “amorphous silica ... is not a part of this rulemaking.” 89 Fed. Reg. at 28,236. Sorptive minerals contain both amorphous silica *and* crystalline silica, SMI Br. 52, and are thus properly included in the scope of MSHA’s rule. MSHA also explained the methodological shortcomings of the Poland study. 89 Fed. Reg. at 28,236 & n.17.

Second, the Mine Act requires MSHA to consider not only the “best available evidence,” but also that “research, demonstrations, experiments, and such other information as may be appropriate,” including “the attainment of the highest degree of health and safety protection for the miner ... the feasibility of the standards, and experience gained under this and other health and safety laws.” 30 U.S.C. 811(a)(6)(A). MSHA considered these factors as well. As discussed, MSHA’s enforcement data—i.e., its experience gained under the Mine Act—show that more than 20% of miners working at

sorptive mineral mines were exposed to respirable crystalline silica at concentrations above the new PEL. 89 Fed. Reg. at 28,302. And MSHA was not arbitrary in considering that including sorptive minerals in the rule would best attain “the highest degree of safety and health protection for the miner,” since the statute directs MSHA to consider exactly that. 30 U.S.C. 811(a)(6)(A).

As it was required to do under the Mine Act, MSHA made a policy judgment to promulgate a standard that will “most adequately assure” based on the “best available evidence,” the “latest scientific evidence,” and its experience, that no miner will suffer material impairment of health or functional capacity because of exposure to respirable silica dust. See 30 U.S.C. 811(a)(6)(A). MSHA discussed extensively that no factual certainties exist at this point as to the toxicity of respirable dust from occluded silica as well as thoroughly discussing the existing scientific research the Secretary found persuasive on why the respirable dust from sportive minerals are hazardous and pose a risk to the health of miners. See *State Farm*, 463 U.S. at 52 (“It is not infrequent that the available data does not settle a regulatory issue and the agency must then exercise its judgment in moving from the facts and probabilities on the record to a policy conclusion[.]” and an agency

acts within its discretion under these circumstances when it “explain[s] the evidence which is available” and “offer[s] a rational connection between the facts found and the choice made.”) (quotation omitted).

Ultimately, MSHA acknowledged SMI’s evidence regarding the lower toxicity of occluded silica. It also presented evidence contrary to the assertion that occluded silica is not non-hazardous, as well as evidence that mining sorptive clay exposes miners to unoccluded silica as well, and that miners in the industry are exposed to high levels of silica generally; and “reached a conclusion about the appropriate course based on that evidence.” *Coal Dust*, 812 F.3d at 883. That is all that is required—especially given the leeway that agencies are given when the science is imperfect.

7.2. MSHA adequately explained its decision not to exclude sorptive minerals.

SMI’s argument boils down to a claim that occluded silica is less dangerous than unoccluded silica, and sorptive minerals contain occluded silica, so it should have been carved out of the rule. SMI Br. 41-42. But MSHA rationally decided not to carve any mined commodity out of the rule: it acknowledged that occlusion might lower the toxicity of silica dust but explained that sorptive minerals are still hazardous and that miners are still exposed to unoccluded silica when removing and processing overburden.

MSHA acknowledged evidence suggesting that clay occlusion of crystalline silica lessens toxicity, but to an unknown degree. App. ___, Health Effects 47-51. MSHA explained that “lower toxicity” does not mean “non-toxic” or “non-hazardous,” or that inhaling occluded silica carries no risk of “adverse health effects, disease, or risk of material impairment of health or functional capacity.” 89 Fed. Reg. at 28,302. Although occlusion and age might mitigate toxicity, other real-world factors could cancel out any mitigating effects. See App. ___, Health Effects 53 (explaining that other factors besides age and occlusion, such as particle size and rate of exposure, contribute to silica’s toxicity and the effects of respirable crystalline silica exposure). That is why MSHA adopted NIOSH’s recommendation for a single PEL for all respirable crystalline silica regardless of specific surface properties like occlusion. 89 Fed. Reg. at 28,256. MSHA concluded from its review of the scientific literature, as well as its own experience inspecting sorptive mineral mines, that “the mining of sorptive minerals creates an inhalation hazard,” *Id.* at 28,302, and that “exposure to the crystalline silica present in sorptive minerals poses a risk of material impairment of health or functional capacity to miners.” *Id.* at 28,303. MSHA explained that the dangers of respirable silica from sorptive minerals are well recognized in

safety data sheets for clay pet litters, App. ___, Health Effects, 51, and that “epidemiological studies of workers exposed to clay-occluded respirable crystalline silica have shown that occupational silicosis can occur among exposed workers.” 89 Fed. Reg. at 28,256 (citing Phibbs *et al.*, 1971; Love *et al.*, 1995, 1999; Chen *et al.*, 2005, 2006, 2012; Harrison *et al.*, 2005). This includes workers who mine and process the sorptive mineral bentonite. *Ibid.*

SMI argues that the mining and processing of sorptive minerals do not alter the occluded nature of the crystalline silica, suggesting that MSHA arbitrarily based its decision not to exclude sorptive minerals in the rule on those grounds. SMI Br. 53-55. Occlusion can be altered when the surface of crystalline silica is “fractured” during processing. *Ibid.* But in both its comment on the proposed rule and its brief before this Court, SMI provided no evidence to support its sweeping claim that the sorptive minerals industry never crushes, cuts, grinds, drills, or heats to high temperature sorptive minerals. App. ___, MSHA-2023-0001-1446, p.7; SMI Br. 53-54.

In MSHA’s extensive experience inspecting sorptive mineral mine sites, see 30 U.S.C. 813(a) (mandating that MSHA inspect all underground mines at least four times a year and all surface mines at least two times a year), it has found the opposite: “during mineral processing, sorptive minerals may be

crushed, heated, dried to remove moisture, re-crushed, and then screened to produce various grades of finished products,” 89 Fed. Reg. at 28,256; see also *Peck v. Thomas*, 697 F.3d 767, 776 (9th Cir. 2015) (holding that an agency “is entitled to invoke its experience as a justification for [a] rule”). Even if the crystalline silica in sorptive minerals is unfractured as it occurs in the ground, the various processes that sorptive minerals undergo have the potential to fracture the surface of the particles, making them more toxic. App. ___, Health Effects 54. The two experiments that SMI relies on to argue that occlusion remains intact even during chemical and industrial processing occurred in a highly controlled laboratory setting, which is not analogous to real-world mineral processing. See SMI Br. 54-55; 89 Fed. Reg. at 28,236.

MSHA also explained that the nature of sorptive mineral dust may change once inhaled into the lungs. SMI references two studies by Wallace to support its claim that inhalation into the lungs does not change the occluded nature of the crystalline silica particles in sorptive minerals. SMI Br. 46. But MSHA explained the limitations of those studies. In those studies, the researchers used an artificial liquid designed to mimic the fluid in the lungs. App. ___, Health Effects 49-50 (citing Wallace *et al.*, 1990 and 1996). Wallace theorized that occlusion would persist for some time, but said that longer-

term persistence in the body remains an “open question.” *Id.* at 50. The researchers called for additional research to assess the durability of occluded particles in tissue. *Ibid.*

MSHA concluded that “there is no evidence that occlusion and the initial reduced toxicity persist following deposition and retention of the crystalline silica particles in the lungs.” 89 Fed. Reg. at 28,235. MSHA explained that air is warmed and humidified in the respiratory tract, and particles are chemically transformed when they are inhaled. App. ___, Health Effects 51. Despite SMI’s claims, no one yet understands how these conditions and processes could change the characteristics of occluded silica once the particles have been inhaled, especially over long periods of time. *Ibid.* Thus, even if occlusion provides some initial protection to miners who inhale sorptive mineral dust, MSHA did not arbitrarily include them in the rule, given that whatever protection there is might deteriorate over time.

And in any event, MSHA was not required to evaluate the level of respirable crystalline silica inherent in each commodity it regulates. Sorptive mineral miners (and all miners) are also exposed to overburden—and the silica in the overburden is *unoccluded*. 89 Fed. Reg. at 28,302. Sorptive mineral deposits occur as part of unique geological formations, and the

mining process entails encountering “all mineral constituents in the deposit, including all forms of respirable crystalline silica.” *Ibid.* “To remove overburden and extract sorptive minerals, miners use large mining equipment that can disturb sedimentary and other silica-rich rock that could contain unoccluded respirable crystalline silica.” *Ibid.* Extracting overburden involves breaking and drilling hard rock, which can create large amounts of dust with high amounts of silica. See *id.* at 28,304 (“For example, activities that involve cutting, grinding, drilling, or crushing rock with higher-silica levels can generate dust with high silica content.”). Miners extracting and milling sorptive minerals (and all minerals) are exposed not only to the sorptive minerals themselves, but to all the surrounding silica-rich rock that must be cut or drilled through to access the mineral deposits and separate them from the undesirable materials.

Mining sorptive minerals is similar to mining minerals such as limestone, which has a low silica content, see 89 Fed. Reg. at 28,225, but which exposes miners to high levels of silica dust through extraction from silica-rich rock, see, *e.g.*, *Nelson Quarries*, 30 FMSHRC at 302 (upholding citation for silica overexposure at limestone quarry). Indeed, MSHA’s enforcement data show that sorptive mineral miners are routinely exposed to silica at concentrations

above the new PEL: from 2005 to 2019, 5.1 percent of samples at “clay” or “bentonite” operations indicated exposures to levels of respirable crystalline silica over the former limit of 100 µg/m³, and 17.6 percent were exposed over the new PEL of 50 µg/m³. 89 Fed. Reg. at 28,302.

MSHA has met its duty to “identify relevant factual evidence ... to state candidly any assumptions on which it relies, and to present its reasons for rejecting any significant contrary evidence and argument.” *United Steelworkers v. Marshall*, 647 F.2d 1189, 1207 (D.C. Cir. 1980), *cert. denied*, 453 U.S. 913 (1981).

7.3. The final rule is feasible for the sorptive minerals industry.

SMI claims that compliance with the final rule will be “exorbitantly costly” for the sorptive mineral industry. SMI Br. 11. SMI failed to raise this issue during the notice-and-comment period. See *City of Portland, Or. v. EPA*, 507 F.3d 706, 710 (D.C. Cir. 2007) (“Because neither Walla Walla nor any other party raised this argument before the Agency during the rulemaking process, however, it is waived, and we will not consider it.”). Regardless, SMI provided no support for its claim that compliance with the new PEL will require the installation of “exorbitantly expensive engineering controls.” SMI Br. 29. The sorptive mineral industry has been regulated at the 100

µg/m³ PEL for decades, 89 Fed. Reg. at 28,256; sorptive mineral mine operators already have at least some dust controls in place. As discussed above, MSHA found that most MNM mines are already in compliance with the 50 µg/m³ PEL. See p.51, *supra*. And the fact that the rule might be costly to comply with does not mean it is infeasible. Under the Mine Act, cost comes second to protecting miners' health. Senate Report 21-22 (“[T]he Committee wishes to emphasize that it rejects the view that cost benefit ratios alone may be the basis for depriving miners of the health protection which the law was intended to insure.”).

SMI also argues that, because OSHA exempted the sorptive minerals industry from its more stringent PEL, some sorptive minerals facilities will have to comply with two different PELs. SMI Br. 11. But MSHA explained that applying a different PEL to sorptive mineral mines is impracticable because its method for analyzing respirable dust samples, X-ray diffraction, “cannot differentiate between ‘freshly fractured’ and occluded crystalline silica.” 89 Fed. Reg. at 28,302. Moreover, sorptive mineral facilities that are under both MSHA and OSHA jurisdiction already have ample experience complying with both agencies' differing standards. In any event, when sorptive mineral mines comply with MSHA's PEL, they will necessarily

satisfy OSHA's requirements. And more importantly, mine operators' theoretical inconvenience does not outweigh MSHA's duty to protect miners from silica-related disease and death. See *Consol Penn. Coal Co., LLC v. FMSHRC*, 941 F.3d 95, 105 (3d Cir. 2019) (“[M]iner protection is central to the mining industry’s interests, so the Mine Act does not seek to balance miners’ safety against any inconvenience associated with compliance that mine operators might face.”). And as the Eleventh Circuit observed in affirming MSHA’s coal dust rule, feasibility concerns “must be viewed through [the] lens” of the Mine Act’s “clear bias in favor of miner health and safety,” and feasibility “cannot be wielded as counterweight to MSHA’s overarching role to protect the life and health of workers in the mining industry.” *Coal Dust*, 812 F.3d at 866.

8. Issues raised for the first time by Amici cannot be considered.

This Court declines to consider issues first “raised to this court by the amici and not by the parties.” *Solis v. Summit Contractors, Inc.*, 558 F.3d 815, 827 n.6 (8th Cir. 2009); see also *Eldred v. Ashcroft*, 255 F.3d 849, 852 (D.C. Cir. 2001) (“*amicus curiae* may not raise new *issues* in an appeal.”). Here, both EMA and Silica Safety Coalition have exceeded their role as amicus of “assist[ing] the court in addressing the issues already raised with new

arguments and perspectives,” *Ashcroft*, 255 F.3d at 852, and have instead “expand[ed] the scope of [the] appeal to implicate issues that have not been presented by the parties to the appeal.” *Resident Council of Allen Parkway Vill. v. U.S. Dep’t of Hous. & Urb. Dev.*, 980 F.2d 1043, 1049 (5th Cir. 1993). This Court must not consider these issues. See *FTC v. Phoebe Putney Health Sys., Inc.*, 568 U.S. 216, 226 (2013).

EMA raised several new issues. First, EMA argues that the final rule’s “immediate reporting requirement” is arbitrary because it is not a logical outgrowth of the proposed rule. EMA Amicus Br. 13-14. Second, EMA challenges the economic feasibility of the final rule’s sampling scheme. *Id.* at 13-16. Third, EMA challenges MSHA’s use of an eight-hour time-weighted-average (“TWA”) for calculating silica exposures. *Id.* at 24 n.3. Lastly, EMA challenges MSHA’s calculation of compliance costs. *Id.* at 24-28. Petitioners did not raise these issues.

SSC also raised new issues. First, SSC argues that MSHA arbitrarily failed to make two separate rules—one for coal mines and one for MNM mines. SCC Amicus Br. 4-11. Second, SSC argues that MSHA failed to explain certain differences between its rule and OSHA’s silica rule, including the incorporation by reference of the ASTM respirator standard,

requirements about the frequency of sampling, triggers for periodic evaluations, and reporting overexposures to each agency. *Id.* at 16-19. Lastly, SSC challenges the feasibility of the rule’s medical surveillance program, arguing that MSHA failed to support its determination that an increased demand for B Readers will lead to additional training for healthcare providers. *Id.* at 22. Petitioners did not raise these issues.

9. Remedy

This rule is authorized by and consistent with the Mine Act. MSHA made rational determinations and adequately explained its rationale for each. The rule is not arbitrary, and the petitions for review should be denied.

If this Court vacates any provisions of the rule, this Court should affirm the rest of the rule and sever the non-offending provisions. “[T]he APA permits a court to sever a rule by setting aside only the offending parts of the rule.” *Carlson v. Postal Regul. Comm’n*, 938 F.3d 337, 351 (D.C. Cir. 2019). It is appropriate to sever regulations where severance would “not impair the function of the statute as a whole, and there is no indication that the regulation would not have been passed but for its inclusion.” *K. Mart Corp. v. Cartier, Inc.*, 486 U.S. 281, 294 (1988). A court may partially affirm an agency rule by severing the non-offending parts of the rule when “the agency

would have adopted the same disposition regarding the unchallenged portion if the challenged portion were subtracted,” and when “the remaining parts of the agency action can function sensibly without the stricken provision.”

Nasdaq Stock Mkt. LLC v. SEC, 38 F.4th 1126, 1144 (D.C. Cir. 2022)

(quotations omitted); *Nat’l Ass’n Mfrs., v. SEC*, 105 F.4th 802, 816 (5th Cir. 2024) (same). Severance is appropriate here because MSHA “expresse[d its] judgment, based on its technical and scientific expertise, that each individual section and provision of the rule can remain effective and operative if some sections or provisions are invalidated, stayed, or enjoined.” 89 Fed. Reg. at 28,348. That makes sense: if any of Petitioners’ challenges succeed, the rest of the rule can function. For example, exempting sorptive minerals mines from the new rule will not affect MSHA’s ability to enforce the rule at other mines; or prohibiting MSHA from requiring X-ray classifications to be shared with NIOSH will not fundamentally alter the core of the rule.

Additionally, “[w]hether an administrative agency’s order or regulation is severable, permitting a court to affirm it in part and reverse it in part, depends on the issuing agency’s intent.” *North Carolina v. FERC*, 730 F.2d 790, 795-796 (D.C. Cir. 1984). Here, MSHA “expresse[d its] intent that if any section or provision of the ... rule ... is held invalid or unenforceable or is

stayed or enjoined by any court of competent jurisdiction, the remaining sections or provisions should remain effective and operative.” 89 Fed. Reg. at 28,348. That shows MSHA’s intent that any provision is severable.

But no provision of this rule should be vacated; this Court should remand any provision it finds unsupported to MSHA without vacatur. The “appropriateness of the remand-without-vacatur remedy turns on two factors: (1) the seriousness of the deficiencies of the action, that is, how likely it is the agency will be able to justify its decision on remand; and (2) the disruptive consequences of vacatur.” *United Steel v. MSHA*, 925 F.3d 1279, 1287 (D.C. Cir. 2019) (quotation omitted). “A strong showing of one factor may obviate the need to find a similar showing of the other.” *Am. Bankers Ass’n v. Nat’l Credit Union Admin.*, 934 F.3d 649, 674 (D.C. Cir. 2019).

As explained above, MSHA thoroughly considered the relevant factors and adequately explained its decision; any deficiencies in the rule are minor, and MSHA can more thoroughly explain its rationale on remand. Moreover, vacatur of the rule would be enormously disruptive: the mining industry has long expected this rule and is making investments of time and resources to comply with it; MSHA is assisting operators with compliance and training

inspectors; and the rule is desperately needed to protect all miners from the dust that is debilitating and killing them.

Conclusion

The petitions for review should be denied.

Respectfully submitted,

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This document complies with the type-volume limit under the Court's January 13, 2025, Order, which states that Respondents may "file a brief in excess of limits set forth in [Fed. R. App. P.] 32(a)(A) and (B) ... not to exceed 26,000 words." Ord., ECF. No. 5474347 (8th Cir. Jan. 13, 2025). Excluding the parts of the document exempted by Fed. R. App. P. 32(f), it contains 25,655 words.

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Counsel also certifies that the brief and addendum have been scanned for viruses and are virus-free.

s/ Marcus D. Reed

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I certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Eighth Circuit by using the appellate CM/ECF system on January 29, 2025, and registered users will be served via the CM/ECF system.

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